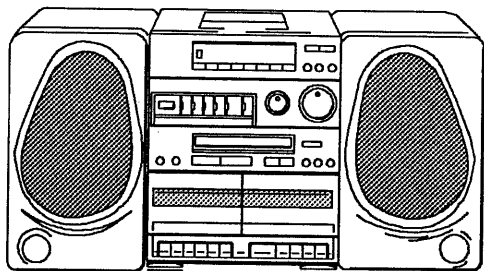


# aiwa

## CA - B500 CA - DW500



CARRY COMPONENT SYSTEM

- BASIC TAPE MECHANISM : TN - 21ZSW
- BASIC CD MECHANISM : KSL - 2101A

- TYPE. D,LH,H,U,E,Z

製品コード : 82CT4 - 0107

MANUAL  
SERVICE

# SPECIFICATIONS

## CA - B500

### <チューナー部>

受信周波数: FM/TV (1~3CH) : 76MHz~108MHz  
 AM: 522~1,629kHz (9kHzステップ)  
 530~1,710kHz (10kHzステップ)  
 アンテナ: FM/TV: ホイップアンテナ  
 AM: フェライトバーアンテナ

### <アンプ部>

定格出力: 5W+5W EIAJ/4Ω  
 入力感度 (負荷インピーダンス): MIC: 2mV(10kΩ)  
 AUX: 330mV(47kΩ)  
 電源: AC100V、50/60Hz  
 乾電池DC-12V、単1形乾電池(SUM-1、R20P)(8)  
 消費電力: 30W

### <カセットデッキ部>

トラック方式: 4トラック2チャンネル  
 録音方式: 交流バイアス  
 消去方式: 交流消去  
 使用テープ: コンパクトカセットテープ  
 再生/録音: ノーマルテープ  
 使用ヘッド: 録音/再生(1)、消去(1)、再生ヘッド(1)  
 周波数特性: ノーマルテープ 50~12,000Hz

### <CDプレーヤー部>

ディスク: コンパクトディスク  
 読み取り方式: 非接触光学式読み取り (半導体レーザー使用)  
 レーザー: 半導体レーザー λ=780nm  
 回転数: 約500rpm~200rpm (CLV)  
 エラー訂正方式: クロスインターリーブリードソロモンコード  
 チャンネル数: 2チャンネル  
 複合化(D/A): 16bit直線  
 周波数特性: 40Hz~20,000Hz±3dB

### <スピーカー>

型式: 2ウェイバスレフタイプ  
 インピーダンス: 4Ω  
 最大入力: 12W  
 使用スピーカー: ウーハー12cmコーン型  
 ツイーター2.7cm セラミック型  
 寸法: 185 (幅) × 305 (高さ) × 220 (奥行き) mm  
 重量: 1.5kg × 2

### <共通部>

本体寸法: 262 (幅) × 305 (高さ) × 245 (奥行き) mm  
 本体重量: 8.1kg  
 システム寸法: 625 (幅) × 305 (高さ) × 245 (奥行き) mm  
 システム重量: 11.1kg

● 外観及び仕様は予告なく変更する場合があります。

## CA - DW500

### TUNERSECTION

#### <H model>

FM 87.0-108.0 MHz  
 Antenna: Whip antenna  
 SW 3.8-12.5 MHz  
 Antenna: Ferrite bar antenna  
 MW 531-1,602 kHz (9 kHz)  
 530-1,600 kHz (10 kHz)  
 Antenna: Ferrite bar antenna

#### <C, LH model>

FM 87.5-108.0 MHz  
 Antenna: Whip antenna  
 AM 530-1,710 kHz (10 kHz)  
 531-1,602 kHz (9 kHz)  
 Antenna: Ferrite bar antenna

#### <U model>

FM 87.5-108.0 MHz  
 Antenna: Whip antenna  
 AM 530-1,710 kHz (10 kHz step)  
 531-1,602 kHz (9 kHz step)  
 Antenna: Ferrite bar antenna

#### <E, Z model>

FM 87.5-108.0 MHz  
 Antenna: Whip antenna  
 MW 522-1,611 kHz (9 kHz)  
 530-1,600 kHz (10 kHz)  
 Antenna: Ferrite bar antenna  
 LW 153-288 kHz  
 Antenna: Ferrite bar antenna

### AMPLIFIERSECTION

Power output 5 W + 5 W (4 ohms, EIAJ)  
 Max.: 7 W + 7 W  
 FTC rule  
 3.75 Watts per channel, Min.  
 RMS at 4 ohms, from 80 Hz  
 to 20,000 Hz, with no more  
 than 3 % distortion

Input sensitivity (load impedance)  
 MIC: 2 mV (10 kohms)  
 CD/LINE IN: 300 mV  
 (47 kohms)

#### Power requirements

<H, LH model>  
 AC 110-120 V/220-240 V  
 Selectable, 50/60 Hz  
 <U model>  
 AC 110-120 V/220-240 V  
 selectable, 60Hz  
 <E, Z models>  
 AC 230 V, 50/60 Hz

Power consumption  
 30 W

### CDPLAYERSECTION

Disc Compact disc  
 Scanning Method Non contact optical scanner  
 (semiconductor laser appli-  
 cation)  
 Laser Semi conductor laser  
 λ = 780 nm  
 Rotation speed Approx. 500-200 rpm/CLV  
 Error correction Cross Interleave, Reed  
 Solomon code  
 No. of channels 2 channels  
 D.A. conversion 16 bit linear  
 Frequency response 40-20,000 Hz ±2  
 -6 dB

### CASSETTEDECKSECTION

Track format 4 tracks, 2 channels  
 Frequency response Normal tape: 50-12,000 Hz  
 Signal to noise ratio 50 dB (Normal tape)  
 0.2 % (WRMS)  
 Tape speed 4.8 cm/sec (1 7/8 ips)  
 Rewind time 120 sec (C-60)  
 Fast forward time 120 sec (C-60)  
 Recording system

Erasure system AC bias  
 AC erase  
 Motor DC motor x 1  
 Heads Record/playback head x 1  
 (deck 1)  
 Erasure head x 1 (deck 1)  
 Playback head x 1 (deck 2)

### COMMONSECTION

Dimensions (W X H X D)  
 625 x 305 x 245 mm  
 (24 5/8 x 12 1/8 x 9 3/4 in.)  
 Weight 7.2 kg (15.8 lbs)  
 (not including batteries)

### SPEAKER

Cabinet type 2-way Bass reflex type  
 Speaker 120 mm (4 3/4 in.)  
 cone type woofer  
 27 mm (1 1/8 in.)  
 ceramic type tweeter  
 Impedance 4 ohms  
 Allowable max. input 12 W  
 Dimensions (W x H x D)  
 185 x 305 x 220 mm x 2  
 (7 3/8 x 12 1/8 x 8 3/4 in.)  
 Weight 1.5 kg (3.3 lbs) x 2

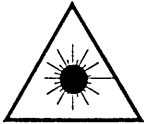
● Design and specifications are  
 subject to change without notice.

## PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

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

### WARNING!!

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



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

### VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

### WARNING!

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.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1  
LASER PRODUCT

LUOKAN 1  
LASERLAITE

KLASS 1  
LASER APPARAT

## 光学ブロック (KSS - 210A) 交換時の注意

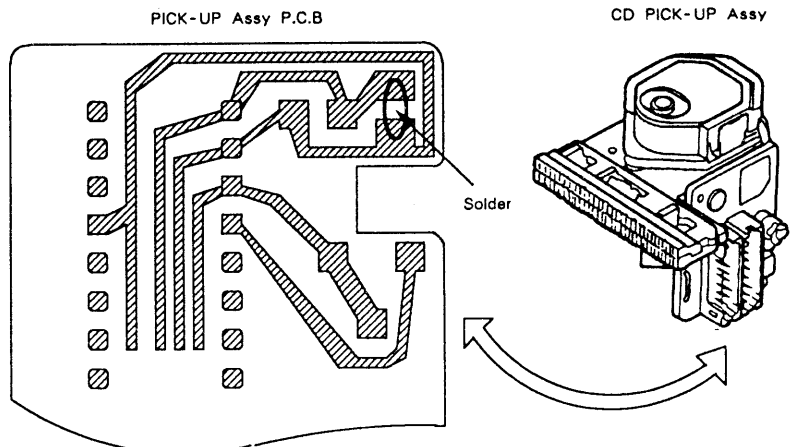
光学系ブロック内のレーザーダイオードは、衣服や人体に帯電した静電荷等で電位差を生じることにより、静電破壊することがあります。人体アース、作業台のアースをとり、衣服が触れぬよう注意して下さい。

- 1) コネクターを接続後、右図に示すハンダ付けを取り除いて下さい。

### Precaution to replace Optical block (KSS - 210A)

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

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



# ELECTRICAL MAIN PARTS LIST

REF. NO. PART NO. カリノ. DESCRIPTION

===IC===

87-027-761-010 1B IC, AN7310  
 87-002-258-010 2A IC, AN8377N  
 S0-510-303-600 1C IC, BA3822LS  
 S4-054-120-000 1E IC, BA5412  
  
 87-002-427-010 1C IC, BA6209N  
 S3-080-355-900 2A IC, BU3559CK  
 △87-001-196-010 1A IC, ICP-N10(EXCEPT U)  
 87-002-268-010 1H IC, LA1851N  
  
 87-001-927-080 1H IC, LC7218M  
 87-001-270-010 1B IC, M5223L  
 87-001-206-010 1C IC, S81250HG  
 87-027-951-010 1B IC, TA7668BP  
  
 87-001-176-010 1E IC, TA8102P  
 87-002-264-080 1B IC, TA8176F  
 87-002-407-010 2A IC, TA8191F  
 S3-130-812-40A 1H IC, TA8124F  
  
 87-002-408-010 2Y IC, TC9236F  
 87-001-516-080 1D IC, TK11821  
 S3-647-820-030 2B IC, TMP47C820F-N831  
 87-002-259-010 1H IC, UPD6376GS

===TRANSISTOR===

89-502-094-010 1A FET, 2SK209Y  
 89-502-114-010 1A FET, 2SK211Y  
 89-112-965-010 1A TRANSISTOR, 2SA1296GR  
 87-026-452-080 0E TRANSISTOR, 2SA933S  
  
 89-210-642-010 1B TRANSISTOR, 2SB1064E  
 87-026-462-080 0E TRANSISTOR, 2SC1740S(RS)  
 89-327-126-010 0E TRANSISTOR, 2SC2712Y  
 89-327-143-080 0E TRANSISTOR, 2SC2714(O)  
  
 89-333-266-010 0E TRANSISTOR, 2SC3326B  
 84-404-635-010 1A TRANSISTOR, 2SD882 Q  
 S3-210-080-500 0E TRANSISTOR, 8050C  
 S1-021-855-000 0E TRANSISTOR, 8550C  
  
 S3-220-901-220 0E TRANSISTOR, 9012H  
 S3-210-901-350 0E TRANSISTOR, 9013H  
 S1-021-901-4C0 0E TRANSISTOR, 9014C  
 87-026-230-010 0E TRANSISTOR, DTA114YK  
  
 87-026-286-010 0E TRANSISTOR, DTA143EK  
 87-026-288-010 0E TRANSISTOR, DTA143XK  
 87-026-219-010 0E TRANSISTOR, DTA144EK  
 87-026-486-080 0E TRANSISTOR, DTA144TS  
  
 87-026-291-080 0E TRANSISTOR, DTC124XK  
 87-026-291-080 0E TRANSISTOR, DTC124XS  
 87-026-287-010 0E TRANSISTOR, DTC143EK

===DIODE===

82-135-799-010 0E DIODE, 1N4148  
 S3-315-401-000 0E DIODE, 1N5401  
 87-020-465-010 0E DIODE, 1SS133  
 87-020-027-080 0E DIODE, 1SS184  
  
 87-020-339-010 0E DIODE, 1SS226  
 S3-320-023-500 1A DIODE, DAN 235K  
 S3-330-002-200 0E ZENER, 2. 2VB 1/2W  
 S3-330-004-300 0E ZENER, 4. 3VB 1/2W  
  
 S3-330-005-100 0E ZENER, 5. 1VB 1/2W  
 S3-330-005-620 0E ZENER, 5. 6VB 1/2W  
 S3-330-006-200 0E ZENER, 6. 2VB  
 S3-330-091-000 0E ZENER, 9. 1V 1/2W

===TUNER CIRCUIT BOARD SECTION===

BPF1 ★S5-535-800-010 FILTER BPMB 6AT(DW500)  
 C7 ★87-010-067-010 CAP, E 0. 1UF-50V(DW500)  
 C17 ★87-010-544-010 0E CAP, E 0. 1-50(B500)  
 C31 ★87-010-067-010 CAP, E 0. 1UF-50V(DW500)  
  
 C72 ★87-010-248-010 0E CAP, E 220-10 SME(B500)  
 C73 ★87-010-248-010 CAP, E 220UF-10V(DW500)

REF. NO. PART NO. カリノ. DESCRIPTION

C73 ★87-010-402-010 0E CAP, E 2. 2-50 SME(B500)  
 C74 ★87-010-402-010 CAP, E 2. 2UF-50V(DW500)  
 C77 ★87-010-401-010 0E CAP, E 1-50 SME(B500)  
 C78 ★87-010-401-019 CAP, E 1UF-50 SME(DW500)  
  
 C79 ★87-010-401-010 0E CAP, E 1-50 SME(B500)  
 C79 ★87-010-401-019 CAP, E 1UF-50 SME(DW500)  
 C80 ★87-010-401-010 0E CAP, E 1-50 SME(B500)  
 C80 ★87-010-546-080 CAP, E 0. 33UF-50V(DW500)  
  
 C81 ★87-010-401-019 CAP, E 1UF-50 SME(DW500)  
 C81 ★87-010-546-010 0E CAP, E 0. 33-50 SME(B500)  
 C84 ★87-010-401-019 CAP, E 1UF-50 SME(DW500)  
 C86 ★87-010-404-010 CAP, E 4. 7UF-50V(DW500)  
  
 C87 ★87-010-378-010 0E CAP, E 10-16(B500)  
 C87 ★87-010-401-019 CAP, E 1UF-50 SME(DW500)  
 C90 ★87-010-405-010 CAP, E 10UF-50V(DW500)  
 C91 ★87-010-545-010 CAP, E 0. 22UF-50(DW500)  
  
 C92 ★87-010-378-010 0E CAP, E 10-16(B500)  
 C96 ★87-010-544-010 0E CAP, E 0. 1-50(B500)  
 C96 ★87-010-545-010 CAP, E 0. 22UF-50(DW500)  
 C97 ★87-010-221-019 CAP, E 470UF-10(DW500)  
  
 C105 ★87-010-544-010 0E CAP, E 0. 1-50(B500)  
 C106 ★87-010-544-010 0E CAP, E 0. 1-50(B500)  
 C111 ★87-010-221-010 0E CAP, E 470-10(B500)  
 C120 ★87-010-263-010 CAP, E 100UF-10V(DW500)  
  
 C129 ★87-010-374-010 CAP, E 47UF-10V(DW500)  
 C134 ★87-010-067-010 CAP, E 0. 1UF-50V(DW500)  
 C137 ★87-010-263-010 0E CAP, E 100-10(B500)  
 C138 ★87-010-405-010 CAP, E 10UF-50V(DW500)  
  
 C139 ★87-010-403-010 0E CAP, E 3. 3-50 SME(B500)  
 C148 ★87-010-544-010 0E CAP, E 0. 1-50(B500)  
 C151 ★87-010-374-010 0E CAP, E 47-10(B500)  
 C172 ★87-010-404-010 0E CAP, E 4. 7-50 SME(B500)  
  
 C175 ★87-010-401-010 0E CAP, E 1-50 SME(B500)  
 C176 ★87-010-401-010 0E CAP, E 1-50 SME(B500)  
 C177 ★87-010-263-010 0E CAP, E 100-10(B500)  
 C182 ★87-010-402-010 0E CAP, E 2. 2-50 SME(B500)  
  
 C184 ★87-010-263-010 0E CAP, E 100-10(B500)  
 C190 ★87-010-402-010 0E CAP, E 2. 2-50 SME(B500)  
 C302 ★87-010-404-010 0E CAP, E 4. 7-50 SME(B500)  
 C309 ★87-010-405-010 0E CAP, E 10-50 SME(B500)  
  
 CF1 ★S5-531-070-52B 1C CERA SFE 10. 7MA5(B500)  
 CF1 ★S5-531-070-510 CERA SFE 10. 7MS2-A(DW500)  
 CF2 ★S5-531-070-52B 1C CERA SFE 10. 7MA5(B500)  
 CF2 ★S5-531-070-510 CERA SFE 10. 7MS2-A(DW500)  
  
 IFT1 ★S5-205-800-03B 1B IFT FM(QUAD) PS(B500)  
 IFT1 ★S5-205-800-030 IFT FM(QUAD)PS(DW500)  
 L1 ★S5-212-280-01A 0E INDUCTOR 2. 2UH 02(B500)  
 L1 ★S5-212-790-000 COIL 0. 27UH(DW500)  
  
 L2 ★S5-214-780-000 1B COIL-CHIP 0805 4. 7UH(B500)  
 L4 ★S5-214-780-000 1B COIL-CHIP 0805 4. 7UH(B500)  
 L3 ★S5-212-280-000 INDUCTOR 2. 2UH(DW500)  
 L4 ★S5-211-010-000 INDUCTOR 100UH(DW500)  
  
 L5 ★S5-211-010-000 INDUCTOR 100UH(DW500)  
 L6 ★S5-205-810-05B 1A COIL OSC AM PS(B500)  
 L6 ★S5-211-010-000 INDUCTOR 100UH(DW500)  
 L7 ★81-CD2-620-010 1E BAR ANT AM10. (B500)  
  
 L7 ★S5-205-800-060 COIL OSC MW-H, PS(H)  
 L7 ★S5-205-800-040 COIL OSC LW PS(E, Z)  
 L8 ★S5-205-800-050 COIL, OSC SW3 PS(H)  
 L8 ★S5-205-800-010 COIL OSC MW PS(LH, U, E, Z)  
  
 L9 ★S5-205-800-003 BAR ANT AM-H3J(H)  
 L10 ★ + + + BAR ANT AM-H3J(H)  
 L9 ★S5-205-800-002 BAR ANT AM-EJ(E, Z)  
 L10 ★ + + + BAR ANT AM-EJ(E, Z)  
  
 L10 ★S5-205-800-000 BAR, ANT AM(LH, U)  
 L10 ★S5-205-800-020 1A COIL, OSC DC-DC(B500)  
 L11 ★S5-205-800-020 COIL, OSC DC-DC(DW500)  
 L11 ★S5-212-290-000 1B COIL 0. 22UH(B500)



| REF. NO. | PART NO.        | カリリNO. | DESCRIPTION                 |
|----------|-----------------|--------|-----------------------------|
| L14      | ★S5-214-700-00A | 0E     | INDUCTOR 47UH 02(B500)      |
| L15      | ★S5-213-300-000 | 1B     | COIL-CHIP, 0805 33UH(B500)  |
| MFT1     | ★S5-535-800-000 | 1D     | FILTER CDMT 450PS           |
| SFR1     | ★S1-811-033-020 | 0E     | SFR 10K-3P(B500)            |
| SFR1     | ★S1-812-233-020 |        | SFR 22K-3P(DW500)           |
| SFR2     | ★S1-811-033-020 |        | SFR 10K-3P(DW500)           |
| TC1      | ★S2-811-000-000 | 1A     | CAP, TRIMMER 10PF(B500, H)  |
| TC1      | ★S2-813-000-000 |        | CAP, TRIMMER 30P(E, Z)      |
| TC2      | ★S2-816-080-000 |        | CAP, TRIMMER 6P(H)          |
| TC2      | ★S2-812-000-000 |        | CAP, TRIMMER 2P-20PF(LH, U) |
| TC2      | ★S2-811-000-000 |        | CAP, TRIMMER 10P(E, Z)      |
| VC1      | S3-390-020-900  | 1B     | DIODE, SVC209TA             |
| VC2      | S3-390-020-900  | 1B     | DIODE, SVC209TA             |
| VC3      | S3-390-020-900  | 1B     | DIODE, SVC209TA(B500)       |
| VC3      | S3-390-156-000  |        | DIODE, KV1560(H, E, Z)      |
| VC4      | S3-390-156-000  | 1E     | DIODE, KV1560               |
| X1       | ★S5-517-200-000 | 1C     | X'TAL 7.2MHZ                |
| X2       | ★S5-520-045-700 | 1A     | CERA RESO KBR457HS15        |
| X3       | ★S5-520-360-00B | 1B     | CERA RESO CSA3.60MGF(B500)  |

===PRE AMP CIRCUIT BOARD SECTION===

|       |                 |    |                             |
|-------|-----------------|----|-----------------------------|
| C300  | ★87-010-260-010 | 0E | CAP, E 47UF-25V             |
| C303  | ★87-010-403-010 | 0E | CAP, E 3.3UF-50V            |
| C306  | ★87-010-403-010 | 0E | CAP, E 3.3UF-50V            |
| C308  | ★87-010-405-010 | 0E | CAP, E 10UF-50V             |
| C309  | ★87-010-101-080 | 0E | CAP, E 220UF-16V            |
| C310  | ★87-010-260-010 | 0E | CAP, E 47UF-25V             |
| C312  | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V            |
| C314  | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V            |
| C316  | ★87-010-260-010 | 0E | CAP, E 47UF-25V             |
| C319  | ★87-010-403-010 | 0E | CAP, E 3.3UF-50V            |
| C321  | ★87-010-403-010 | 0E | CAP, E 3.3UF-50V            |
| C324  | ★87-010-101-080 | 0E | CAP, E 220UF-16V            |
| C332  | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V            |
| C333  | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V            |
| C336  | ★87-010-385-010 | 0E | CAP, E 100UF-25V            |
| C337  | ★87-010-101-080 | 0E | CAP, E 220UF-16V            |
| C338  | ★87-010-403-010 | 0E | CAP, E 3.3UF-50V            |
| C339  | ★87-010-101-080 | 0E | CAP, E 220UF-16V            |
| C340  | ★87-010-403-010 | 0E | CAP, E 3.3UF-50V            |
| C341  | ★87-010-101-080 | 0E | CAP, E 220UF-16V            |
| C343  | ★87-010-385-010 | 0E | CAP, E 100UF-25V            |
| C347  | ★87-010-389-010 | 1B | CAP, E 2200UF-25V           |
| C348  | ★87-010-385-010 | 0E | CAP, E 100UF-25V            |
| C349  | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V            |
| C350  | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V            |
| C351  | ★87-010-260-010 | 0E | CAP, E 47UF-25V             |
| C352  | ★87-010-260-010 | 0E | CAP, E 47UF-25V             |
| C353  | ★87-010-385-010 | 0E | CAP, E 100UF-25V            |
| C355  | ★87-010-260-010 | 0E | CAP, E 47UF-25V             |
| C357  | ★87-010-388-010 | 1A | CAP, E 1000UF-25V           |
| C358  | ★87-010-388-010 | 1A | CAP, E 1000UF-25V           |
| C359  | ★87-010-388-010 | 1A | CAP, E 1000UF-25V           |
| C360  | ★87-010-260-010 | 0E | CAP, E 47UF-25V             |
| C364  | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V            |
| C366  | ★87-010-235-080 | 0E | CAP, E 470UF-16V            |
| C371  | ★87-010-235-080 | 0E | CAP, E 470UF-16V            |
| C372  | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V            |
| L300  | ★S5-214-700-010 | 0E | COIL 47UH                   |
| L301  | ★S5-225-556-210 | 1A | AC BIAS OSC COIL(2A621)     |
| SW302 | S5-145-800-010  | 1A | SWITCH, PUSH 9P2T(REC→PLAY) |
| VR300 | ★S1-822-025-000 | 0E | VR, RES, 2KB-3P             |

===CD MAIN CIRCUIT BOARD SECTION===

|     |                 |    |                  |
|-----|-----------------|----|------------------|
| C1  | ★87-010-382-010 | 0E | CAP, E 22UF-25V  |
| C6  | ★87-010-248-010 | 0E | CAP, E 220UF-10V |
| C9  | ★87-010-545-010 | 0E | CAP, E 0.22UF-50 |
| C10 | ★87-010-263-010 | 0E | CAP, E 100UF-10V |

| REF. NO. | PART NO.        | カリリNO. | DESCRIPTION       |
|----------|-----------------|--------|-------------------|
| C11      | ★87-010-401-019 | 0E     | CAP, E 1-50 SME   |
| C12      | ★87-010-248-010 | 0E     | CAP, E 220UF-10V  |
| C15      | ★87-010-265-080 | 0E     | CAP, E 33UF-16U   |
| C16      | ★87-010-403-010 | 0E     | CAP, E 3.3UF-50V  |
| C17      | ★87-010-374-010 | 0E     | CAP, E 47UF-10V   |
| C24      | ★87-010-248-010 | 0E     | CAP, E 220UF-10V  |
| C26      | ★87-010-371-010 | 0E     | CAP, E 470UF-6.3V |
| C27      | ★87-010-235-080 | 0E     | CAP, E 470UF-16V  |
| C35      | ★87-010-263-010 | 0E     | CAP, E 100UF-10V  |
| C38      | ★87-010-263-010 | 0E     | CAP, E 100UF-10V  |
| C44      | ★87-010-248-010 | 0E     | CAP, E 220UF-10V  |
| C50      | ★87-010-374-010 | 0E     | CAP, E 47UF-10V   |
| C52      | ★87-010-401-019 | 0E     | CAP, E 1-50 SME   |
| C64      | ★87-010-381-080 | 0E     | CAP, E 330UF-16V  |
| C101     | ★87-010-374-010 | 0E     | CAP, E 47UF-10V   |
| C102     | ★87-010-374-010 | 0E     | CAP, E 47UF-10V   |
| C109     | ★87-010-404-010 | 0E     | CAP, E 4.7UF-50V  |
| C110     | ★87-010-404-010 | 0E     | CAP, E 4.7UF-50V  |
| EMI1     | ★S5-535-800-020 | 0E     | FILTER 01RN1      |
| EMI2     | ★S5-535-800-020 | 0E     | FILTER 01RN1      |

|      |                 |    |                  |
|------|-----------------|----|------------------|
| L1   | ★S5-211-010-000 | 0E | INDUCTOR 100UH   |
| L2   | ★S5-211-010-000 | 0E | INDUCTOR 100UH   |
| SFR1 | ★S1-814-723-020 | 0E | SFR 4.7K-3P      |
| SFR2 | ★S1-811-043-020 | 0E | SFR 100K-3P      |
| X1   | ★S5-520-169-300 | 1B | CERA RESO 16.93M |

===FRONT CIRCUIT BOARD SECTION===

|        |                 |    |                                 |
|--------|-----------------|----|---------------------------------|
| C103   | ★87-010-405-010 | 0E | CAP, E 10UF-50V                 |
| C105   | ★87-010-385-010 | 0E | CAP, E 100UF-25V                |
| C122   | ★87-010-405-010 | 0E | CAP, E 10UF-50V                 |
| C123   | ★87-010-403-010 | 0E | CAP, E 3.3UF-50V                |
| C125   | ★87-010-385-010 | 0E | CAP, E 100UF-25V                |
| C127   | ★87-010-385-010 | 0E | CAP, E 100UF-25V                |
| C129   | ★87-010-101-080 | 0E | CAP, E 220UF-16V                |
| C131   | ★87-010-400-010 | 0E | CAP, E 0.47UF-50V               |
| C132   | ★87-010-405-010 | 0E | CAP, E 10UF-50V                 |
| C133   | ★87-010-405-010 | 0E | CAP, E 10UF-50V                 |
| C134   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C135   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C136   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C137   | ★87-010-382-010 | 0E | CAP, E 22UF-25V                 |
| C138   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C139   | ★87-010-382-010 | 0E | CAP, E 22UF-25V                 |
| C140   | ★87-010-385-010 | 0E | CAP, E 100UF-25V                |
| C141   | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V                |
| C144   | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V                |
| C146   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C148   | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V                |
| C149   | ★87-010-067-010 | 0E | CAP, E 0.1UF-50V                |
| C150   | ★87-010-546-080 | 0E | CAP, E 0.33UF-50V               |
| C151   | ★87-010-546-080 | 0E | CAP, E 0.33UF-50V               |
| C164   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C165   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C166   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C167   | ★87-010-404-010 | 0E | CAP, E 4.7UF-50V                |
| C170   | ★87-010-101-080 | 0E | CAP, E 220UF-16V                |
| C171   | ★87-010-385-010 | 0E | CAP, E 100UF-25V                |
| C172   | ★87-010-385-010 | 0E | CAP, E 100UF-25V                |
| C177   | ★87-010-385-010 | 0E | CAP, E 100UF-25V                |
| C178   | ★87-010-371-010 | 0E | CAP, E 470UF-6.3V               |
| C180   | ★87-010-385-010 | 0E | CAP, E 100UF-25V                |
| LCD100 | S3-520-053-000  | 2A | LCD, BU5300AZ(DISPLAY)          |
| LED100 | S3-515-500-000  | 0E | LED, 5X5MM RED HI-EFF(OPE/BATT) |
| S100   | S5-165-550-071  | 0E | TACT SWITCH(▲OPEN/CLOSE)        |
| S101   | S5-165-800-010  | 0E | TACT SWITCH(1)                  |
| S102   | S5-165-800-010  | 0E | TACT SWITCH(2)                  |
| S103   | S5-165-800-010  | 0E | TACT SWITCH(3)                  |

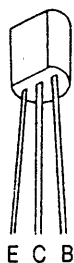
| REF. NO.                         | PART NO.        | カリノ.        | DESCRIPTION         |
|----------------------------------|-----------------|-------------|---------------------|
| S104                             | S5-165-800-010  | OE TACT     | SWITCH(4)           |
| S105                             | S5-165-800-010  | OE TACT     | SWITCH(5)           |
| S106                             | S5-165-800-010  | OE TACT     | SWITCH(6)           |
| S107                             | S5-165-800-010  | OE TACT     | SWITCH(7)           |
| S108                             | S5-165-800-010  | OE TACT     | SWITCH(8)           |
| S109                             | S5-165-550-071  | OE TACT     | SWITCH(BAND)        |
| S110                             | S5-165-550-071  | OE TACT     | SWITCH(MEMORY/SET)  |
| S111                             | S5-165-550-071  | OE TACT     | SWITCH(STOP)        |
| S112                             | S5-165-550-071  | OE TACT     | SWITCH(>UP)         |
| S113                             | S5-165-550-071  | OE TACT     | SWITCH(REPEAT)      |
| S114                             | S5-165-550-071  | OE TACT     | SWITCH(PLAY/PAUSE)  |
| S115                             | S5-165-550-071  | OE TACT     | SWITCH(>DOWN)       |
| S116                             | S5-165-550-071  | OE TACT     | SWITCH(CD MODE)     |
| S117                             | S5-165-550-071  | OE TACT     | SWITCH(FM MODE/OSC) |
| S118                             | S5-165-550-071  | OE TACT     | SWITCH(MEMORY)      |
| S119                             | S5-165-550-071  | OE TACT     | SWITCH(▶▶▶▶)        |
| S120                             | S5-165-550-071  | OE TACT     | SWITCH(◀◀◀◀)        |
| SW102                            | S5-134-400-000  | 1E SWITCH   | 4P4T(FUNCTION)      |
| SW103                            | S5-102-258-000  | 1B SWITCH   | 2P2T(DUBBING SPEED) |
| VR100                            | ★S1-815-032-050 | 1C VR       | 50KA-25F(VOLUME)    |
| VR101                            | ★S1-821-040-121 | 1A SLIDE    | VR 100KBX2(BALANCE) |
| VR102                            | ★S1-825-030-121 | 1A SLIDE    | VR 50KBX2(100Hz)    |
| VR103                            | ★S1-825-030-121 | 1A SLIDE    | VR 50KBX2(350Hz)    |
| VR104                            | ★S1-825-030-121 | 1A SLIDE    | VR 50KBX2(1kHz)     |
| VR105                            | ★S1-825-030-121 | 1A SLIDE    | VR 50KBX2(3.5kHz)   |
| VR106                            | ★S1-825-030-121 | 1A SLIDE    | VR 50KBX2(10kHz)    |
| X1                               | ★S5-524-190-000 | 1B CERA     | RESO 4.19M          |
| X2                               | ★S5-510-327-682 | 1B X'TAL    | 32.768kHz           |
| ===MIC CIRCUIT BOARD SECTION===  |                 |             |                     |
| J500                             | ★S5-065-800-020 | 1B ST PHONE | JACK(PHONES)        |
| J501                             | ★S5-065-800-020 | 1B ST PHONE | JACK(MIXING MIC)    |
| ===JACK CIRCUIT BOARD SECTION=== |                 |             |                     |
| J600                             | ★S5-063-080-010 | 1A RCA JACK | PHONO CD(AUX)       |
| J601                             | ★S5-065-800-010 | OE SPEAKER  | JACK(SPEAKERS R)    |
| J602                             | ★S5-065-800-010 | OE SPEAKER  | JACK(SPEAKERS L)    |

| REF. NO.                            | PART NO.        | カリノ.          | DESCRIPTION           |
|-------------------------------------|-----------------|---------------|-----------------------|
| ===POWER CIRCUIT BOARD SECTION===   |                 |               |                       |
|                                     | ★S5-320-558-000 | OE FUSE       | CLIP DIA=5MM          |
| △C405                               | ★87-010-389-010 | 1B CAP, E     | 2200UF-25V            |
| △F401                               | S5-310-202-500  | 1A FUSE       | 2A 250V(EXCEPT U)     |
| △F401                               | S5-310-302-500  | FUSE          | 3A 250V(U)            |
| ===MOTOR-1 CIRCUIT BOARD SECTION=== |                 |               |                       |
| M1                                  | 9X-262-513-210  | 2M MOTOR      | GEAR ASSY(SLED)       |
| M2                                  | 9X-262-513-310  | 2C MOTOR      | ASSY(W/CHASSIS, T. T) |
|                                     |                 |               | (SPINDLE)             |
| SW1                                 | 91-572-085-110  | 1B LEAF       | SW(INSIDE LIMIT)      |
| ===MOTOR-2 CIRCUIT BOARD SECTION=== |                 |               |                       |
| M3                                  | 9X-262-511-710  | —             | MOTOR ASSY(LOADING)   |
| SW2                                 | 91-572-086-110  | 1B LEAF       | SW(OPEN)              |
| SW3                                 | 91-572-086-110  | 1B LEAF       | SW(CLOSE)             |
| ===MISCELLANEOUS===                 |                 |               |                       |
|                                     | 98-848-127-11Z  | 2G OPTICAL    | PICK UP KSS-210A      |
| EH                                  | ★S6-202-140-190 | 1E E HEAD     | (D1)                  |
| △J1                                 | ★S5-075-800-00D | 1A AC SOCKET  | UL/CSA TYPE-PSUZ7     |
|                                     |                 |               | (AC~)(B500, H, LH, U) |
| △J1                                 | ★S5-075-800-000 | AC SOCKET     | (AC~)(E, Z)           |
| △S1                                 | ★S5-145-800-00C | SWITCH, SLIDE | (AC VOLTAGE)(H, U)    |
| △S1                                 | ★S5-145-800-000 | SWITCH, SLIDE | (AC VOLTAGE)(LH)      |
| M1                                  | S6-003-030-440  | 2A MOTOR      | (DECK)                |
| PH                                  | S6-202-010-750  | 1H P HEAD     | (D2)                  |
| △PT1                                | ★S5-235-800-60A | 2B POWER      | TRANSFORMER 100V      |
|                                     |                 |               | 1.6A(B500)            |
| △PT1                                | S5-235-800-00A  | POWER         | TRANSFORMER 120V      |
|                                     |                 |               | 1.6A(H, LH, U)        |

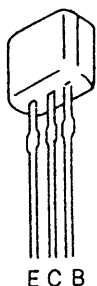
## ■ ACCESSORIES/PACKAGE LIST

| PART NO.   | REF. | PART NO.       | カリノ | DESCRIPTION                  | COMMON | Q,TY |
|------------|------|----------------|-----|------------------------------|--------|------|
| CHANGED TO | NO.  |                | NO. |                              | MODEL  |      |
|            | 1    | S6-015-800-016 | 1C  | INSTRUCTION, BOOKLET (D)     |        | 1    |
|            | 2A   | S6-015-800-011 |     | INSTRUCTION, BOOKLET (E, U)  |        | 1    |
|            | 2B   | S6-015-800-010 |     | INSTRUCTION, BOOKLET (K)     |        | 1    |
|            | 3    | S6-015-800-012 |     | INSTRUCTION, BOOKLET (Z)     |        | 1    |
|            | 4    | S6-015-800-013 |     | INSTRUCTION, BOOKLET (H, LH) |        | 1    |
|            | 5    | S5-795-800-010 | 1C  | POWER CORD SET (D)           |        | 1    |
|            | 6    | S5-795-800-20M |     | POWER CORD SET (E, Z)        |        | 1    |
|            | 7    | S5-795-800-010 |     | POWER CORD SET (U, H, LH)    |        | 1    |
|            | 8    | S5-795-800-020 |     | POWER CORD SET (K)           |        | 1    |

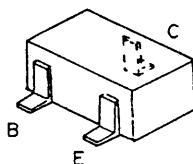
# TRANSISTOR ILLUSTRATION



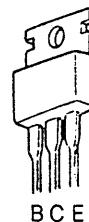
2SA1296  
8050C  
8550C  
9012H  
9013H  
9014C



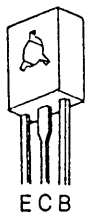
2SA993  
2SC1740  
DTA144TS  
DTC124XS



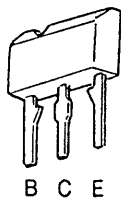
2SC2712  
2SC2714  
2SC3326  
DTA114YK  
DTA143XK  
DTA144EK  
DTC124XK  
DTC143EK



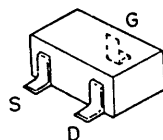
2SB1064



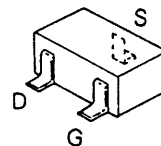
2SD882



DTA143EK



2SK209



2SK211

下記の IC 端子説明は、CSD - EX5 を参照して下さい。

|   | CA - B500         | CSD - EX5         |
|---|-------------------|-------------------|
| ① | TA8191F           | TA8191F           |
| ② | UPD6376GS         | UPD6376GS         |
| ③ | TC9236F           | TC9236F           |
| ④ | LC7218M           | LC7218M           |
| ⑤ | TMP47C820F - N831 | TMP47C820F - N857 |
| ⑥ | BU3559CK          | BU3559CK          |

# IC DESCRIPTION – 1

## IC,TA8191F

| Pin No. | Pin Name | I/O | Description                                                                      |
|---------|----------|-----|----------------------------------------------------------------------------------|
| 1       | TPO      | O   | Sub-beam I-V amplifier (TP AMP) output terminal.                                 |
| 2       | TP I     | I   | Sub-beam I-V amplifier (TP AMP) input terminal.                                  |
| 3       | TNI      | I   | Sub-beam I-V amplifier (TP AMP) input terminal.                                  |
| 4       | FNI      | I   | Main-beam I-V amplifier (FM AMP) input terminal.                                 |
| 5       | FPI      | O   | Laser diode amplifier (LD AMP) input terminal.                                   |
| 6       | LDO      | O   | Laser diode amplifier (LD AMP) output terminal.                                  |
| 7       | MDI      | I   | Monitor photo diode amplifier (MD AMP) input terminal.                           |
| 8       | RFN      | I   | RF amplifier (RF AMP) negative-phase input terminal.                             |
| 9       | RFO      | O   | RF amplifier (RF AMP) output terminal.                                           |
| 10      | RFI      | I   | RF ripple signal output terminal.                                                |
| 11      | VREF     | O   | Reference voltage output terminal. (+2.1V)                                       |
| 12      | RFRP     | O   | RF ripple signal output terminal.                                                |
| 13      | SBAD     | O   | Scratch detection signal output terminal.                                        |
| 14      | FEB      | I   | Focus error balance adjustment input terminal.                                   |
| 15      | FEO      | O   | Focus error amplifier (FE AMP) output terminal.                                  |
| 16      | SEL      | I   | Analog switch control signal input terminal.                                     |
| 17      | VEE      | I   | Power terminal. (TA8190F: -5V; TA8191F: GND)                                     |
| 18      | FSN      | I   | Focus output amplifier (FS AMP) negative-phase output terminal.                  |
| 19      | FSO      | O   | Focus output amplifier (FS AMP) output terminal.                                 |
| 20      | COSC     | I   | Capacitor connection terminal for focus search signal generation.                |
| 21      | OSCI     | I   | Built-in power supply control input terminal for focus search signal generation. |
| 22      | GND      | —   | GND                                                                              |
| 23      | VCC      | I   | Power supply terminal. (+5V)                                                     |
| 24      | DMEP     | I   | Disk motor amplifier (DM AMP) positive-phase input terminal.                     |
| 25      | DMEN     | I   | Disk motor amplifier (DM AMP) negative-phase input terminal.                     |
| 26      | DMEO     | O   | Disk motor amplifier (DM AMP) output terminal.                                   |
| 27      | DMPO     | O   | Disk motor drive amplifier (DMP AMP) output terminal. (Not used.)                |
| 28      | PVR      | I   | Drive amplifier reference voltage input terminal.                                |
| 29      | FMPO     | O   | Feed motor drive amplifier (FMP AMP) output terminal.                            |
| 30      | FMEO     | O   | Feed motor drive amplifier (FM AMP) output terminal.                             |
| 31      | FMEN     | I   | Feed motor amplifier (FM AMP) negative-phase input terminal.                     |
| 32      | FMEP     | I   | Feed motor amplifier (FM AMP) positive-phase input terminal.                     |
| 33      | FAP O    | O   | Focus actuator drive amplifier (FAP AMP) output terminal. (Not used.)            |
| 34      | 2VRO     | O   | 2VREF amplifier (2VREF AMP) output terminal.                                     |
| 35      | 2VRP     | I   | 2VREF amplifier (2VREF AMP) positive-phase input terminal.                       |
| 36      | 2VRN     | I   | 2VREF amplifier (2VREF AMP) negative-phase input terminal.                       |
| 37      | TS2O     | O   | Tracking servo amplifier 2 (TS2 AMP) output terminal.                            |
| 38      | TS2N     | I   | Tracking servo amplifier 2 (TS2 AMP) negative-phase input terminal.              |
| 39      | TS2P     | I   | Tracking servo amplifier 2 (TS2 AMP) positive-phase input terminal.              |
| 40      | TS1O     | O   | Tracking servo amplifier 1 (TS1 AMP) output terminal.                            |

| Pin No. | Pin Name | I/O | Description                                                         |
|---------|----------|-----|---------------------------------------------------------------------|
| 4 1     | TS1N     | I   | Tracking servo amplifier 1 (TS1 AMP) negative-phase input terminal. |
| 4 2     | TS1P     | I   | Tracking servo amplifier 1 (TS1 AMP) positive-phase input terminal. |
| 4 3     | TSO      | O   | Tracking output amplifier (TS AMP) output terminal.                 |
| 4 4     | TSN      | I   | Tracking output amplifier (TS AMP) negative-phase input terminal.   |

#### IC,UPD6376GS

| Pin No. | Pin Name  | I/O | Description                                                                                                                                                                                                                                                                              |
|---------|-----------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | 4/8fs SEL | I   | When this terminal is "Low" or open, data in L-ch and R-ch is input through pin 15 in time-division. When "High", data in L-ch is input through pin 15 and data in R-ch through pin 14 respectively. (Output is pulled-down through a resistor of 100 kohms in IC.) (GND)                |
| 2       | D. GND    | —   | GND terminal for logic section.                                                                                                                                                                                                                                                          |
| 3       | NC        | —   | Not used.                                                                                                                                                                                                                                                                                |
| 4       | D. +B     | —   | Power supply terminal for logic section. (+5V)                                                                                                                                                                                                                                           |
| 5       | A. GND    | —   | GND terminal for analog section.                                                                                                                                                                                                                                                         |
| 6       | R. OUT    | O   | R-ch analog signal output terminal.                                                                                                                                                                                                                                                      |
| 7       | A. +B     | —   | Power supply terminal to analog section. (+5V)                                                                                                                                                                                                                                           |
| 8       | A. +B     |     |                                                                                                                                                                                                                                                                                          |
| 9       | R. REF    | —   | Reference voltage terminal. Normally connected to A.GND via capacitor so that an impedance of high frequency data is lowered.                                                                                                                                                            |
| 10      | L. REF    |     |                                                                                                                                                                                                                                                                                          |
| 11      | L. OUT    | O   | L-ch analog signal output terminal.                                                                                                                                                                                                                                                      |
| 12      | A. GND    | —   | GND terminal for analog section.                                                                                                                                                                                                                                                         |
| 13      | LRCK      | I   | When pin 1 is "Low" or open, input data L/R discrimination signal is input. When "High", input data word discrimination signal is input.                                                                                                                                                 |
| 14      | LRSEL     | I   | When pin 1 is "Low" or open, L or R channel is selected for the LRCK signal. When the LRCK signal is "High" and L-ch data is input, the LRSEL terminal is "Low". When "Low" and L-ch data is input, the LRSEL terminal is "High". When pin 1 is "High", R-ch serial data is input. (+5V) |
| 15      | SI        | I   | When pin 1 is "Low" or open, L-ch and R-ch serial data is input alternatively. When "High", L-ch serial data is input.                                                                                                                                                                   |
| 16      | CLK       | I   | Serial input data read-in clock input terminal.                                                                                                                                                                                                                                          |

# IC,TC9236F

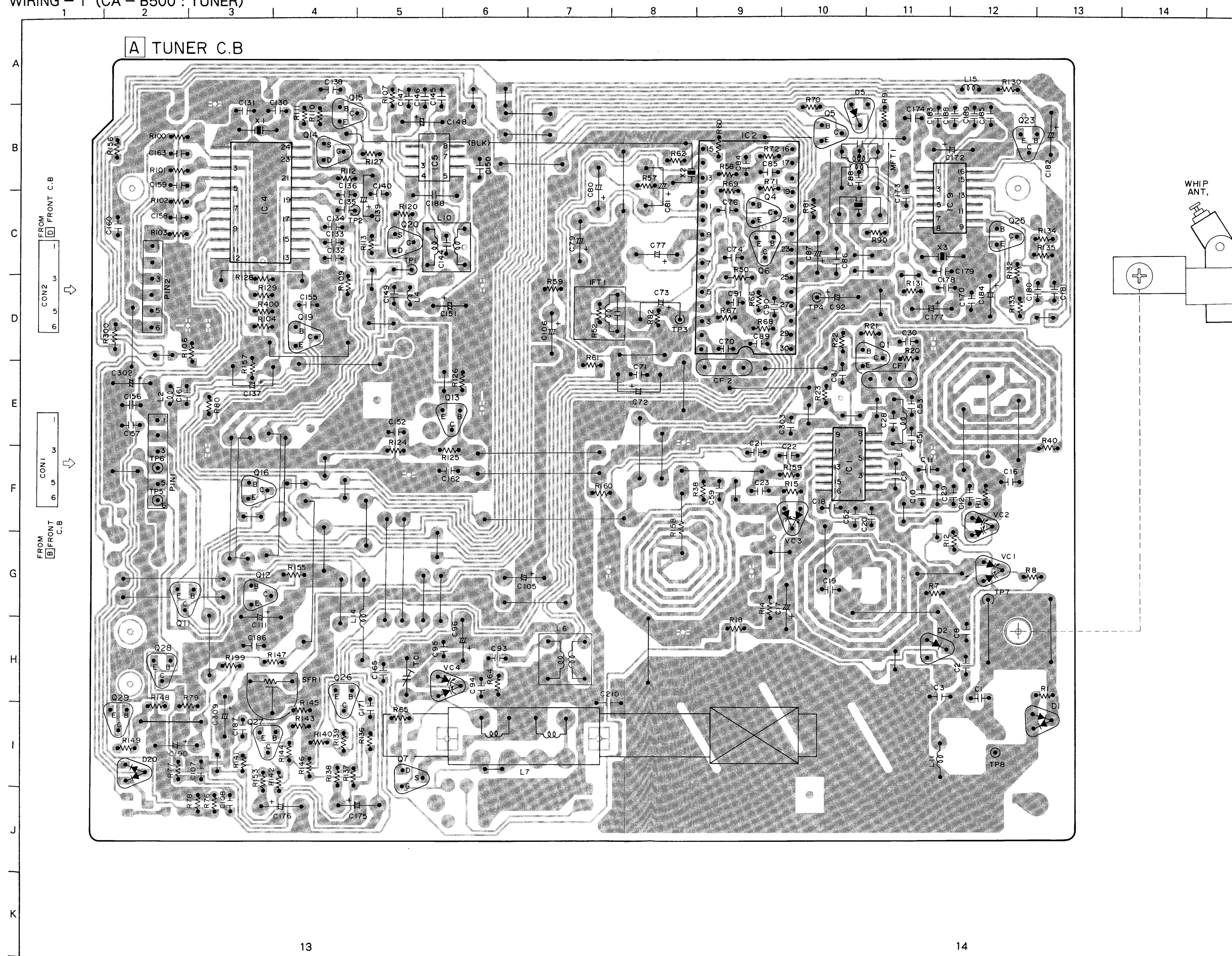
| Pin No. | Pin Name  | I/O | Description                                                                                                                                                                                                                                                                   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

|            |      |      |
|------------|------|------|
| Feed servo | FMON | FMON |
| ON         | HiZ  | VREF |
| OFF        | VREF | HiZ  |

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

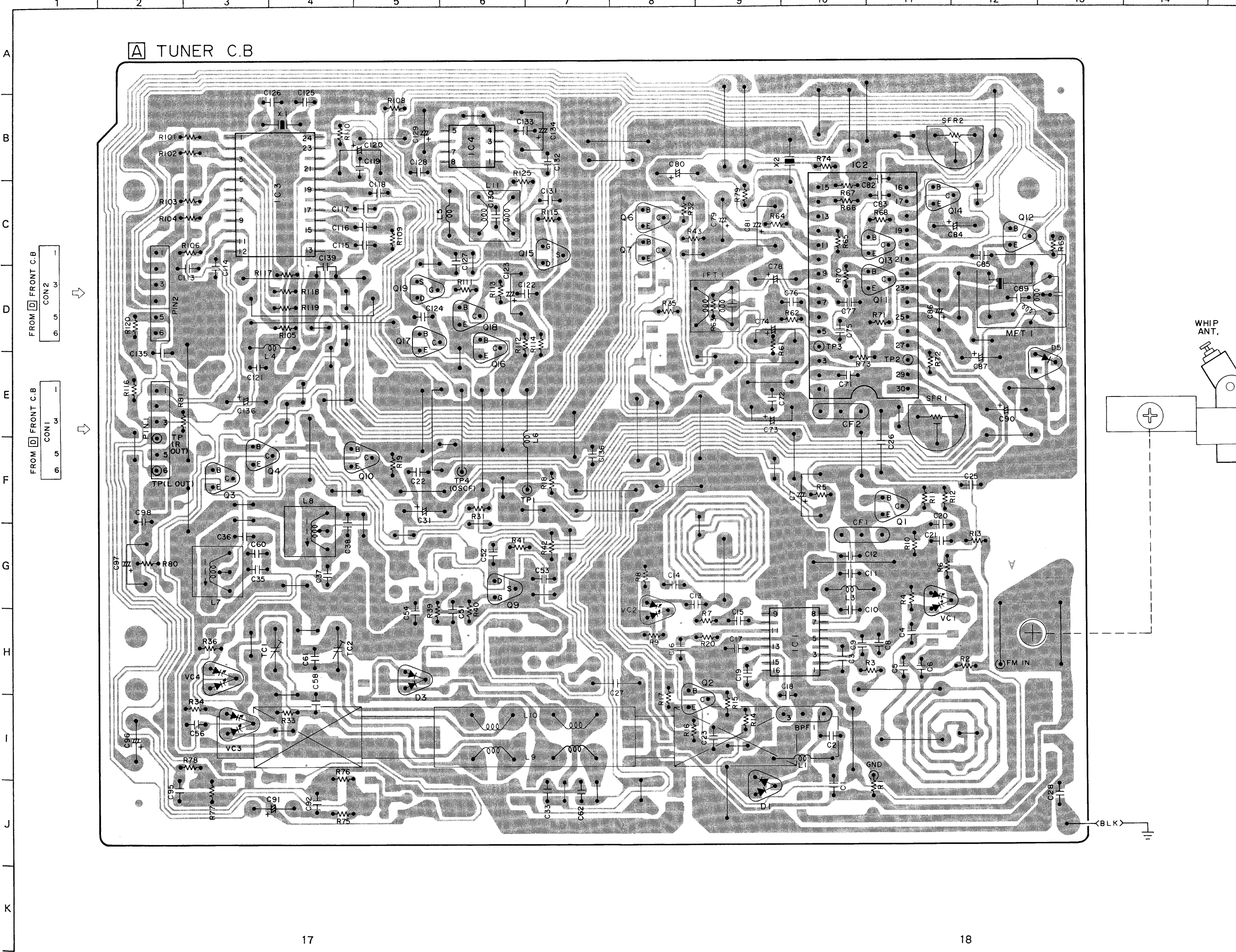
| Pin No. | Pin Name | I/O | Description                                                               |             |
|---------|----------|-----|---------------------------------------------------------------------------|-------------|
| 6 1     | TMAX     | O   | TMAX signal output terminal. HiZ in system clock.                         |             |
|         |          |     | TMAX cycle                                                                | TMAX output |
|         |          |     | Longer than specified cycle                                               | L           |
|         |          |     | Shorter than specified cycle                                              | L           |
|         |          |     | Specified cycle                                                           | HiZ         |
| 6 2     | LPFN     | I   | LPF amplifier negative-phase input terminal for PLL.                      |             |
| 6 3     | LPFO     | O   | LPF amplifier output terminal for PLL.                                    |             |
| 6 4     | VCOF     | I   | VCO filter terminal.                                                      |             |
| 6 5     | VCOX     | I   | External VCO clock input terminal. (GND)                                  |             |
| 6 6     | PLCK     | O   | Playback data read clock output terminal. (Not used.)                     |             |
| 6 7     | MOD0     | I   | Internal operation mode setting input terminal. (GND)                     |             |
| 6 8     | MOD1     |     |                                                                           |             |
| 6 8     | MOD2     |     |                                                                           |             |
| 7 0     | WDCK     | O   | Word clock output terminal. Normally 88.2kHz. (Not used.)                 |             |
| 7 1     | CHCK     | O   | Channel clock output terminal. Normally 44.1kHz.                          |             |
| 7 2     | BCK      | O   | Bit clock output terminal. Normally 1.4112MHz.                            |             |
| 7 3     | AOUT     | O   | Audio data output terminal.                                               |             |
| 7 4     | CKSE     | I   | Internal clock selection terminal. (+5V)                                  |             |
| 7 5     | DOUT     | O   | Digital OUT output terminal. (Not used.)                                  |             |
| 7 6     | TEST2    | I   | Test terminal. Normally "H" or open. (Not used.)                          |             |
| 7 7     | HS       | O   | High-speed monitor output terminal. High-speed mode when "L". (Not used.) |             |
| 7 8     | EMPH     | O   | Emphasis ON/OFF indication signal output terminal. Emphasis ON when "H".  |             |
| 7 9     | TEST3    | I   | Test terminal. Normally "H" or open. (Not used.)                          |             |
| 8 0     | MCK      | O   | Master clock output terminal. (Not used.)                                 |             |



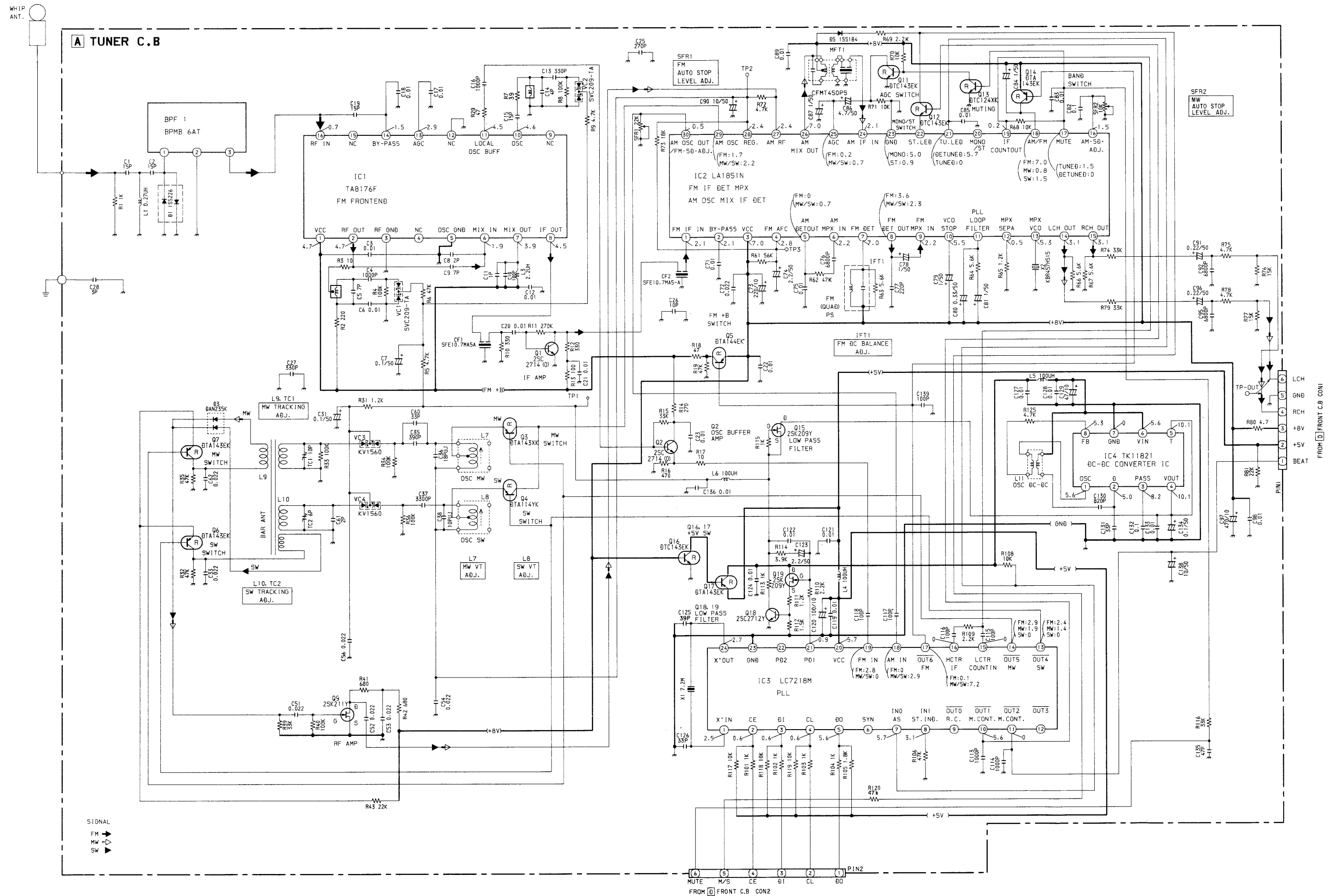




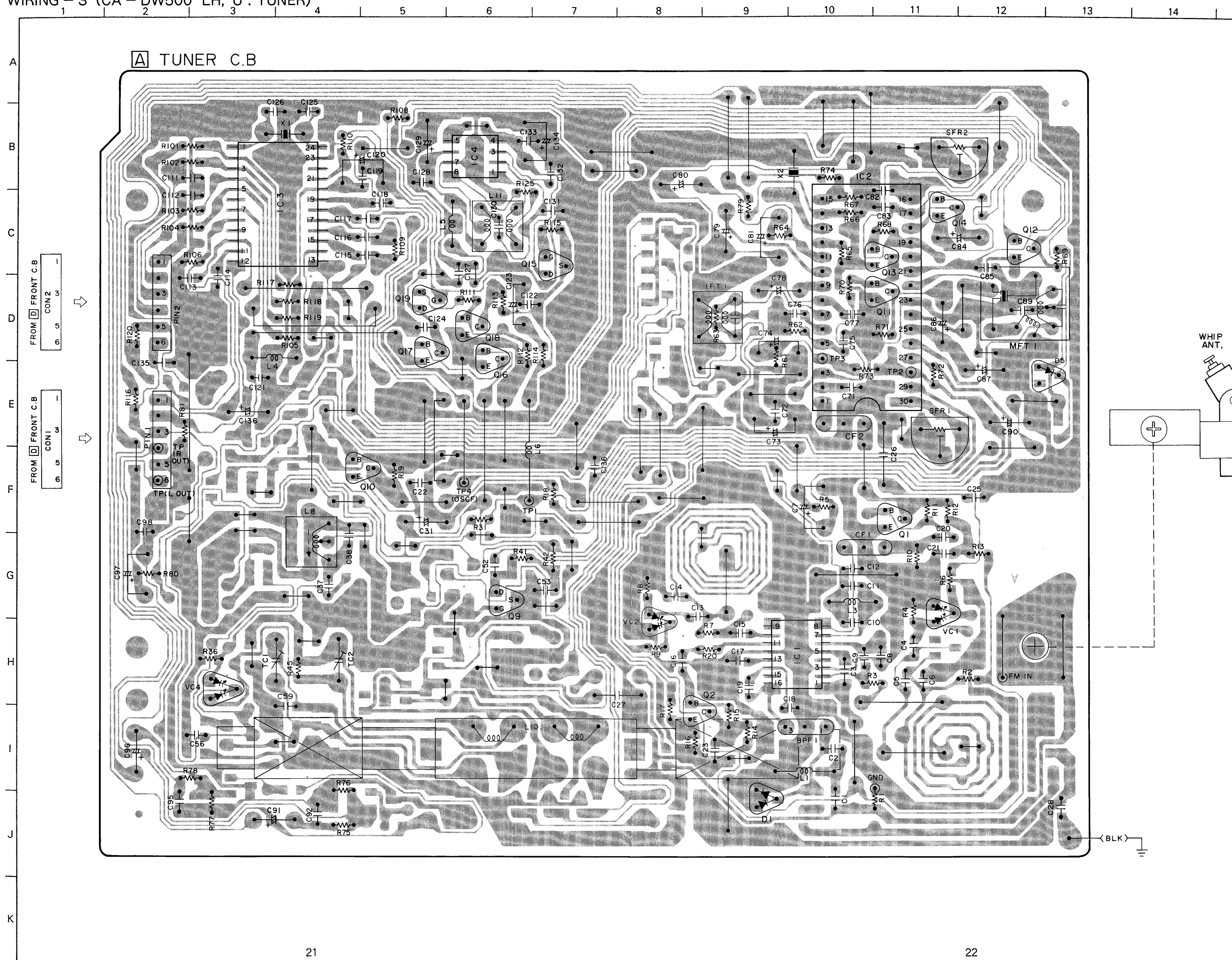




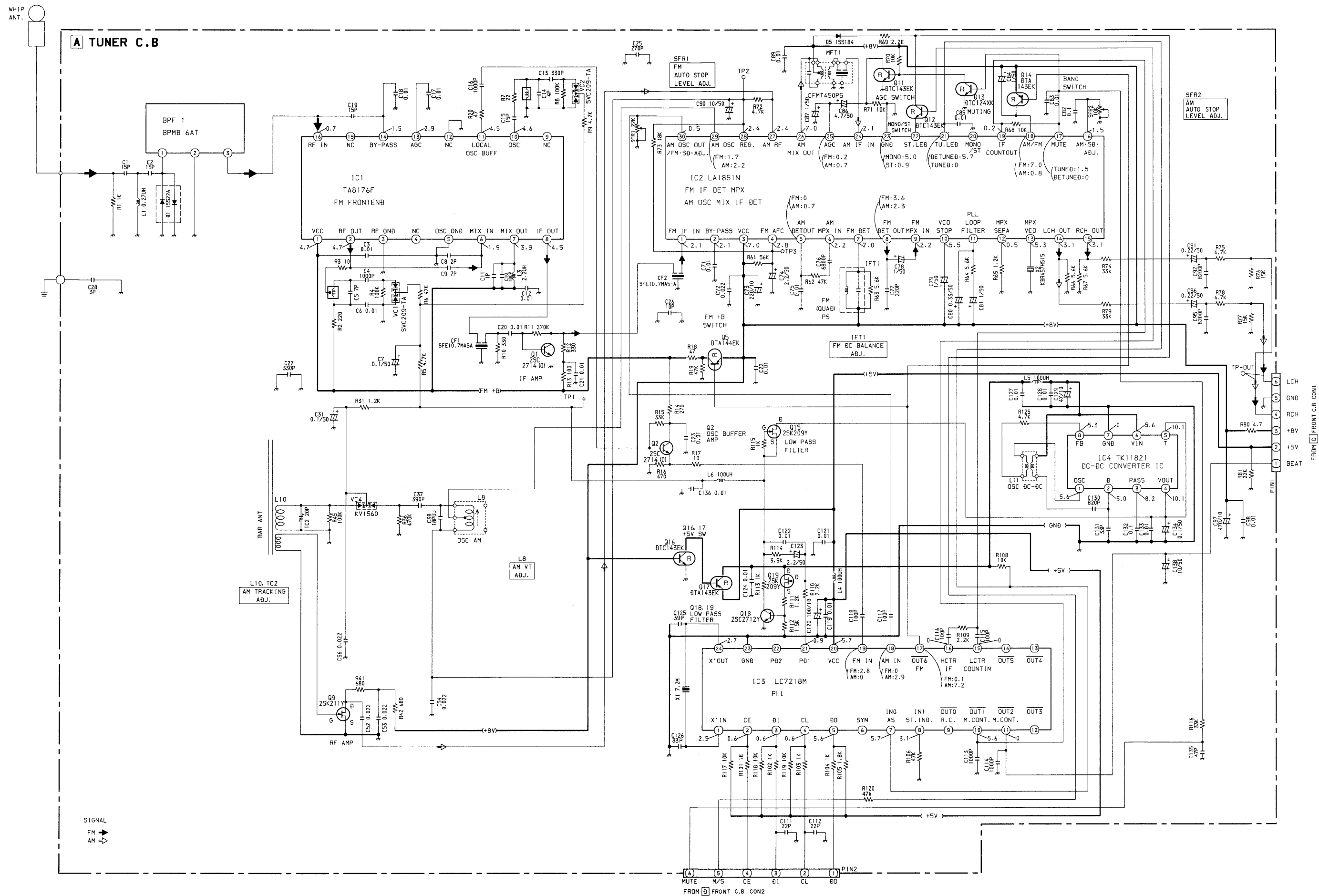
SCHEMATIC DIAGRAM - 2 (CA - DW500 H : TUNER)







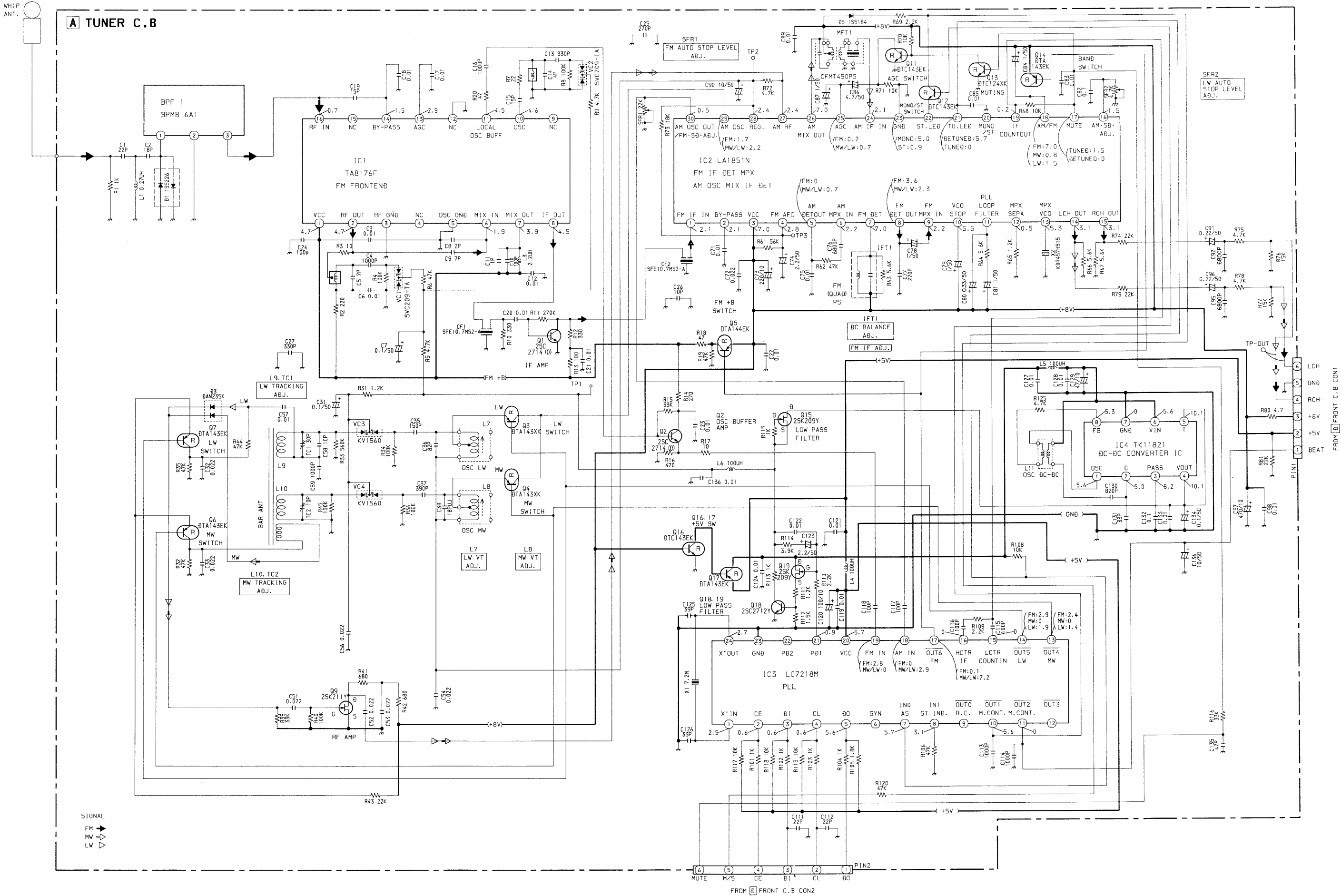
SCHEMATIC DIAGRAM – 3 (CA – DW500 LH, U : TUNER)



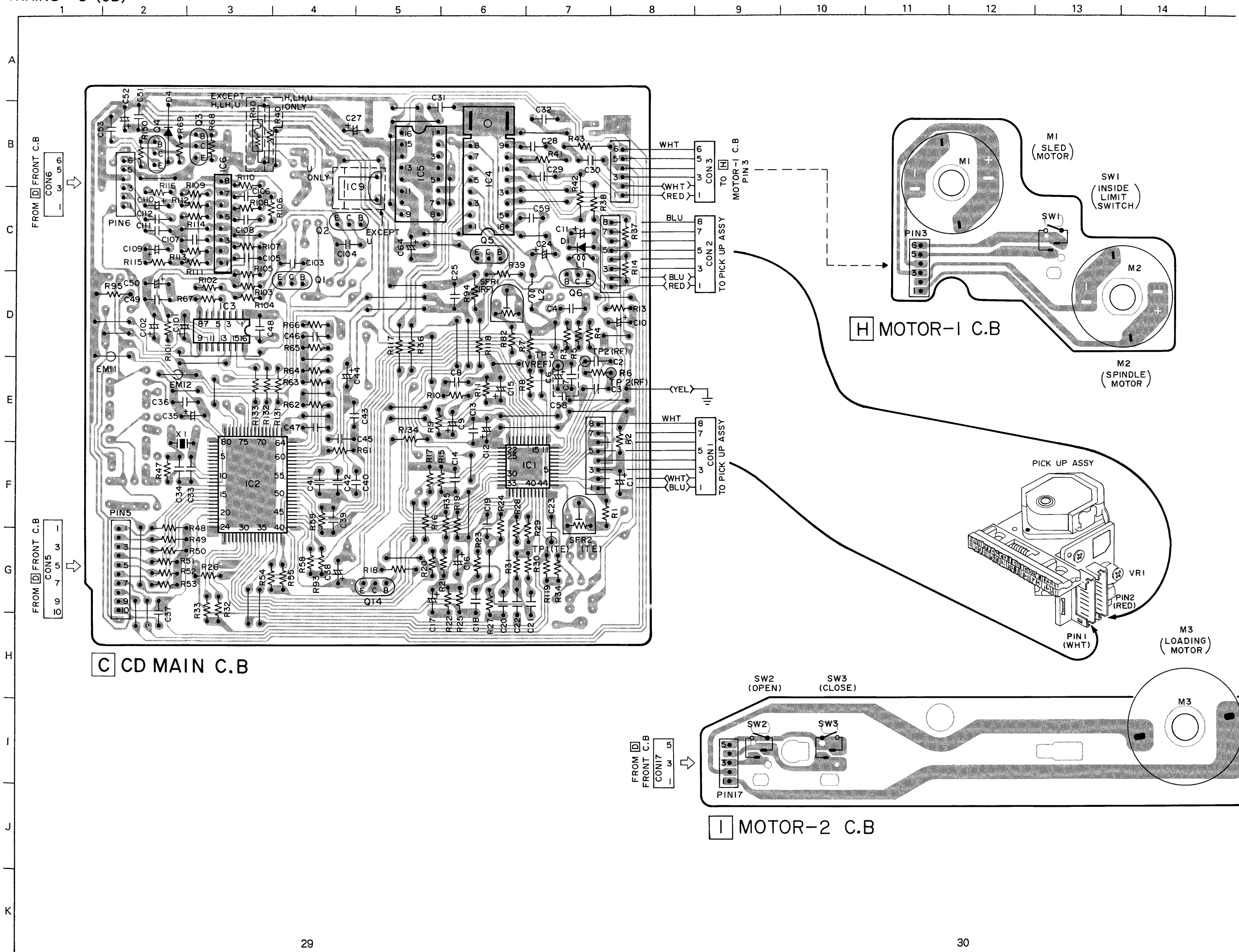


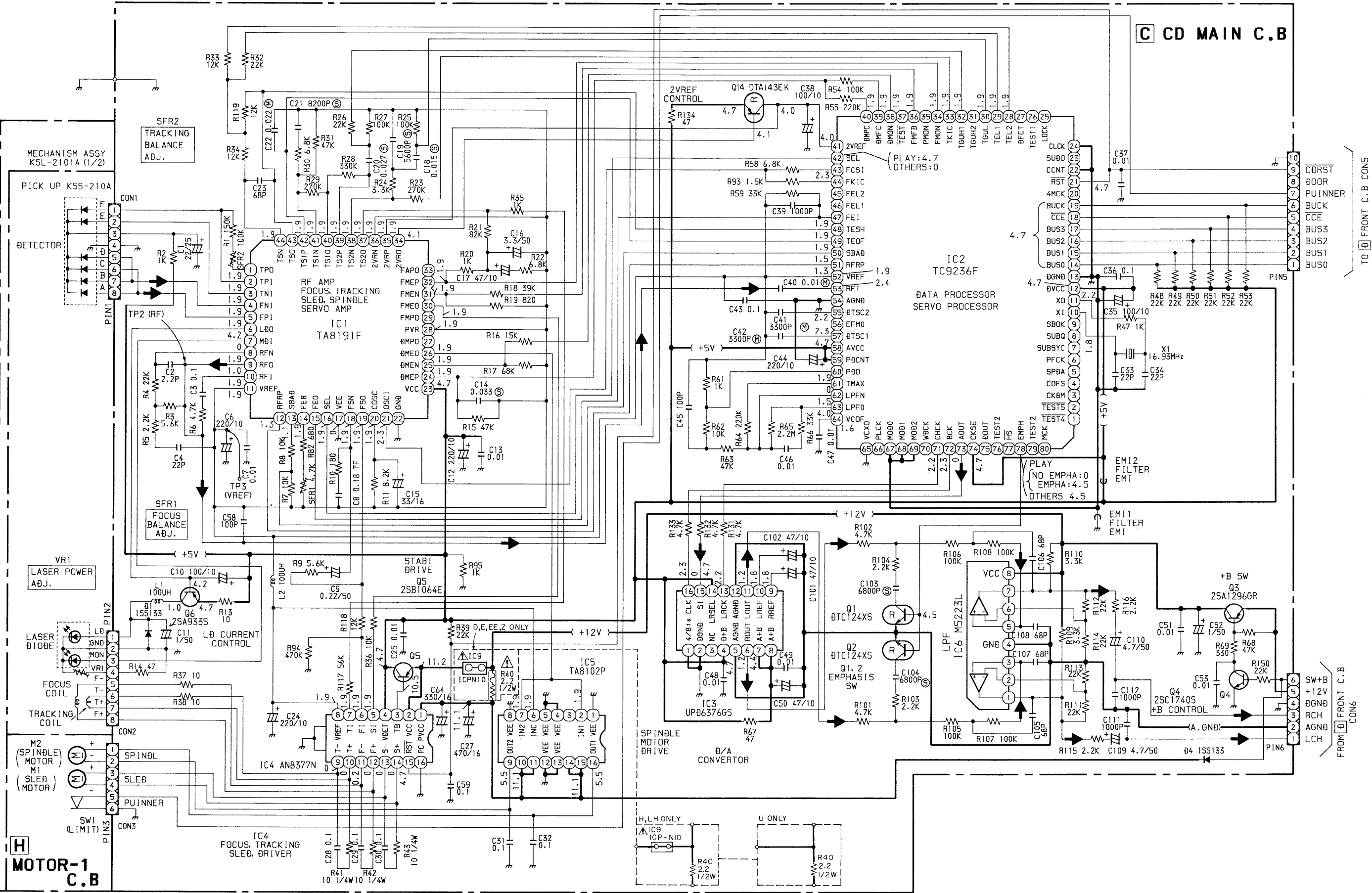


SCHEMATIC DIAGRAM – 4 (CA – DW500 E, Z : TUNER)







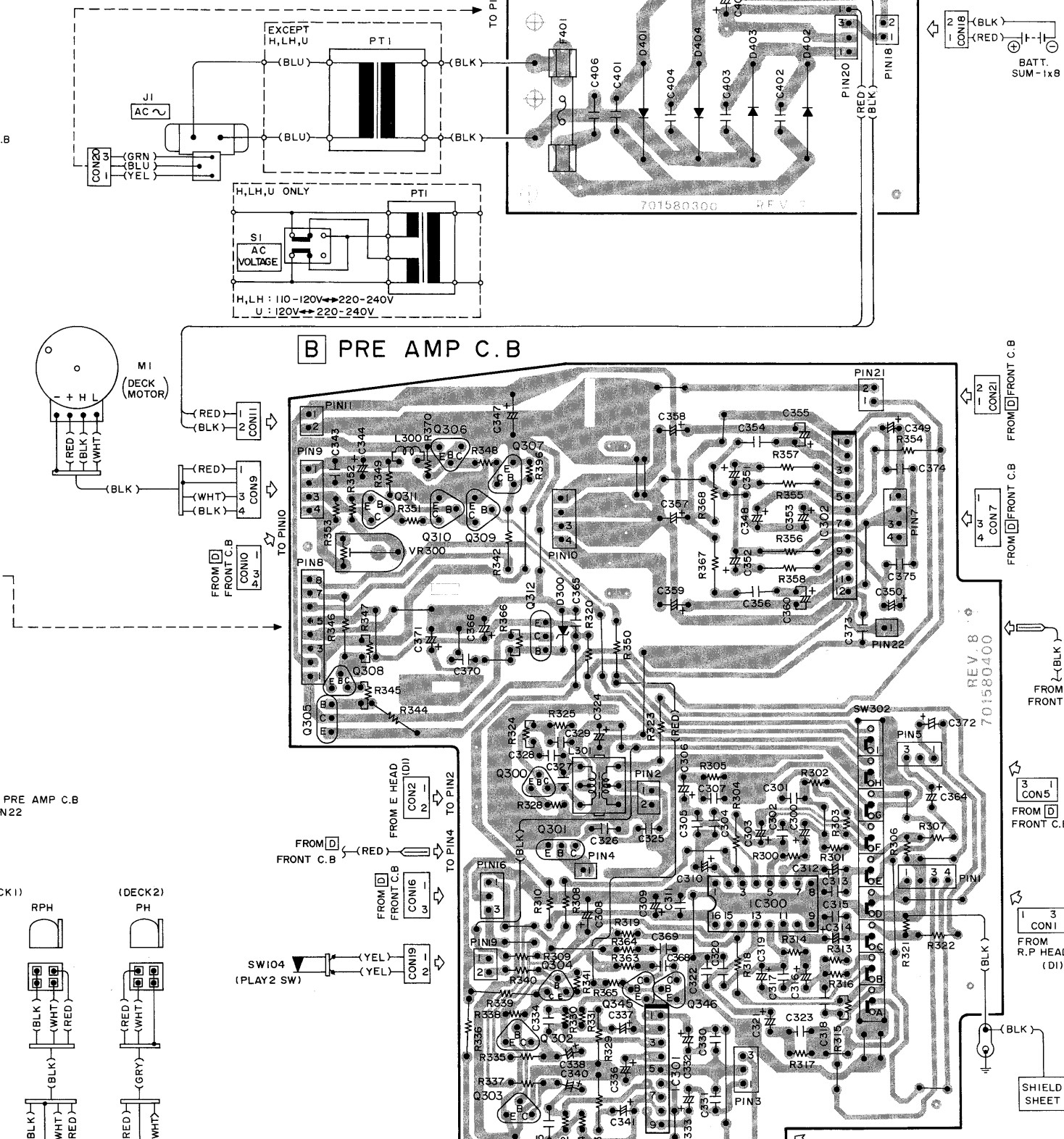
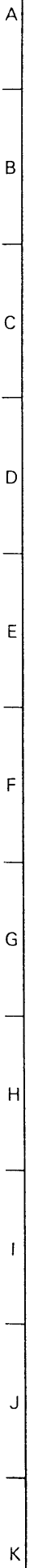


# IC DESCRIPTION – 2

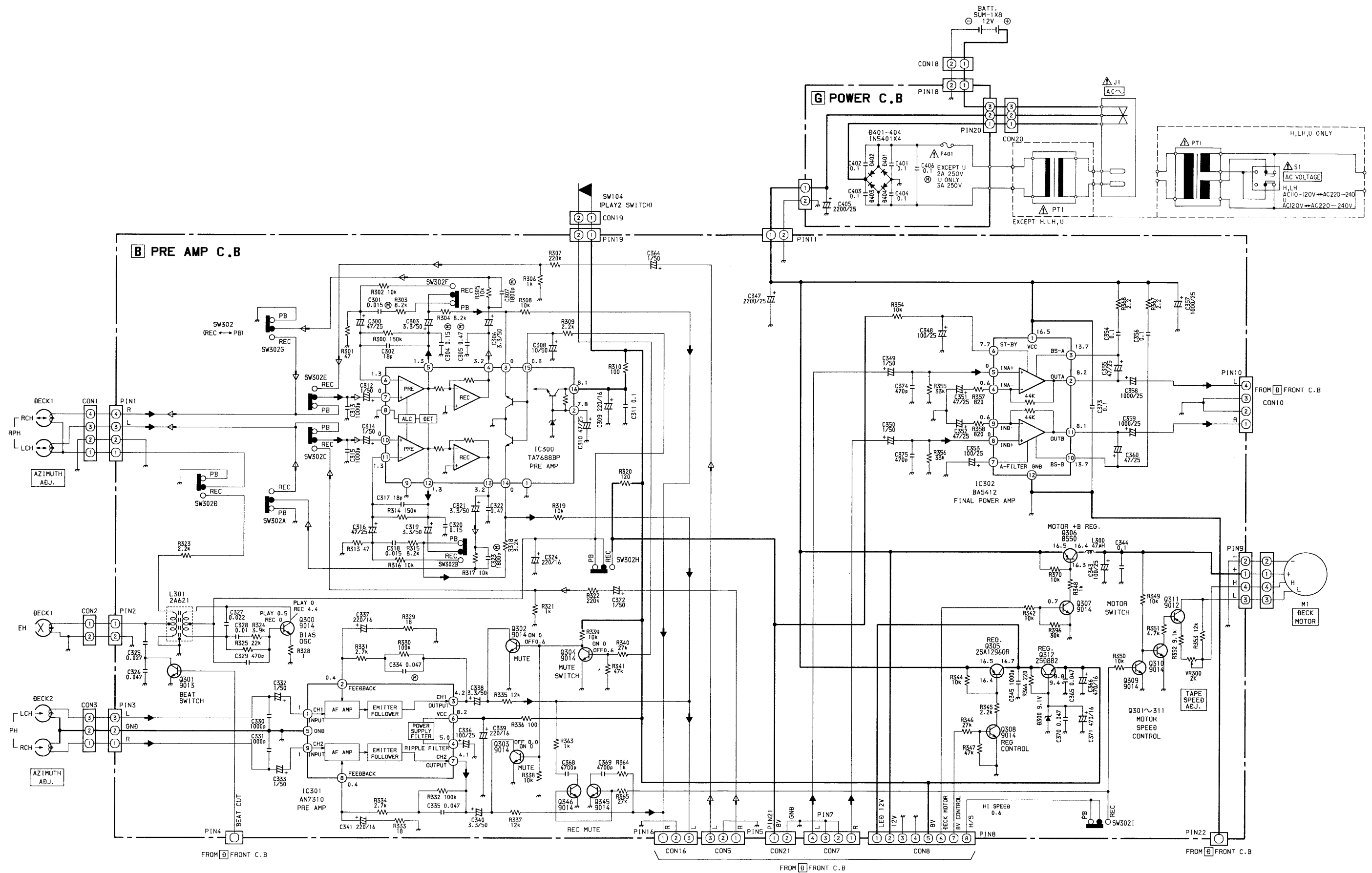
## IC,BU3559CK

| Pin No. | Pin Name                          | I/O | Description                                                                                            |              |    |       |       |      |
|---------|-----------------------------------|-----|--------------------------------------------------------------------------------------------------------|--------------|----|-------|-------|------|
| 1       | $\overline{\text{TAPE}}$          | O   | Common drive Nch open drain output for the function of TP LED driver.                                  |              |    |       |       |      |
| 2       | $\overline{\text{DOLBY}}$         | O   | Common drive Nch open drain output for the function of the TP LED driver.                              |              |    |       |       |      |
| 3       | $\overline{\text{TAPE MODE}}$     | O   | Common drive Nch open drain output for the function of the TP LED driver.                              |              |    |       |       |      |
| 4       | $\overline{\text{HI SPEED DUBB}}$ | O   | Common drive Nch open drain output for the function of the TP LED driver.                              |              |    |       |       |      |
| 5       | $\overline{\text{CD STOP}}$       | O   | "L" output when CD STOP.                                                                               |              |    |       |       |      |
| 6       | NC                                | O   | Not used.                                                                                              |              |    |       |       |      |
| 7       | NC                                | O   | Not used.                                                                                              |              |    |       |       |      |
| 8       | NC                                | O   | Not used.                                                                                              |              |    |       |       |      |
| 9       | $\overline{\text{HALT}}$          | I   | Manual HALT input. Setting this terminal to "L" stops oscillating and lessens the current consumption. |              |    |       |       |      |
| 10      | OSC2                              | O   | Not used.                                                                                              |              |    |       |       |      |
| 11      | OSC1                              | I   | 4MHz clock input.                                                                                      |              |    |       |       |      |
| 12      | GND                               | —   | Reference voltage for all input and output. 0V.                                                        |              |    |       |       |      |
| 13      | A GND                             | —   | Reference voltage for the analog circuit. 0V.                                                          |              |    |       |       |      |
| 14      | KEY IN 1                          | I   | CD tray OPEN/CLOSE KEY input.                                                                          |              |    |       |       |      |
| 15      | CMP 0                             | I   | Not used.                                                                                              |              |    |       |       |      |
| 16      | CMP 0                             | I   | Not used.                                                                                              |              |    |       |       |      |
| 17      | KEY IN 2                          | I   | CD tray SW detection. "H" when SW is OFF.                                                              |              |    |       |       |      |
| 18      | AVDD                              | —   | Power supply connection for the analog circuit of 4.5-5.5V.                                            |              |    |       |       |      |
| 19      | $\overline{\text{INIT}}$          | I   | Manual reset input.<br>"L" when reset and the ROM address is set to 0 address of 0 page.               |              |    |       |       |      |
| 20      | ANALOG SW A                       | I/O | Function IC input switch output.                                                                       | Function     | CD | TP    | TUNER | LINE |
| 21      | ANALOG SW B                       | I/O |                                                                                                        | ANALOG SW A  | H  | L     | L     | H    |
|         |                                   |     |                                                                                                        | ANALOG SW B  | L  | L     | H     | H    |
| 22      | MOTOR OPEN                        | I/O | CD tray motor drive IC input switch output.<br>IN SW ON "L", OFF "H". OUT SW ON "L", OFF "H".          |              |    |       |       |      |
| 23      | MOTOR CLOSE                       | I/O |                                                                                                        |              |    |       |       |      |
| 24      | IN SW                             | I   | CD tray IN SW detection input.                                                                         |              |    |       |       |      |
| 25      | OUT SW                            | I   | CD tray OUT SW detection input.                                                                        |              |    |       |       |      |
| 26      | REC                               | I   | Not used.                                                                                              |              |    |       |       |      |
| 27      | REMOCON IN                        | I   | Remote control signal input terminal.                                                                  |              |    |       |       |      |
| 28      | VDD                               | —   | Current of 4.0V-6.0V is connected.                                                                     |              |    |       |       |      |
| 29      | MUTE                              | O   | Not used.                                                                                              |              |    |       |       |      |
| 30      | $\overline{\text{CD}}$            | O   | Common drive Nch open drain output for the function of CD LED driver.                                  | Signal Input | CD | TUNER | LINE  | TAPE |
| 31      | $\overline{\text{TUNER}}$         | O   |                                                                                                        | CD           | L  | H     | H     | H    |
|         |                                   |     |                                                                                                        | TUNER        | H  | L     | H     | H    |
|         |                                   |     |                                                                                                        | LINE         | H  | H     | L     | H    |
| 32      | $\overline{\text{LINE}}$          | O   | Common drive Nch open drain output for the function of LINE LED                                        | TAPE         | H  | H     | H     | L    |
|         |                                   |     |                                                                                                        |              |    |       |       |      |





# SCHEMATIC DIAGRAM – 6 (PRE AMP)





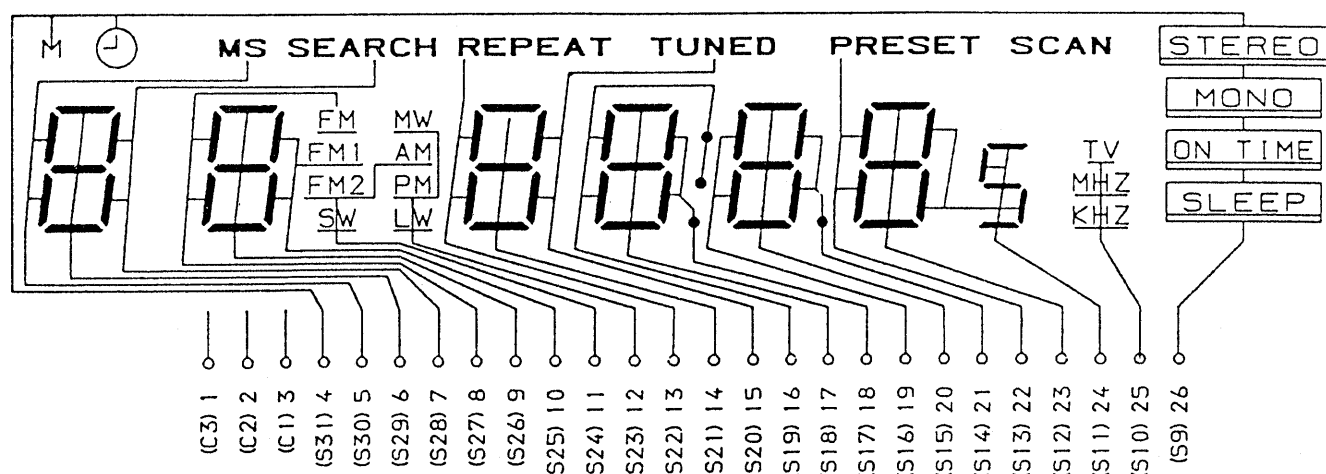
# IC DESCRIPTION – 3

## IC,TMP47C820F – N831

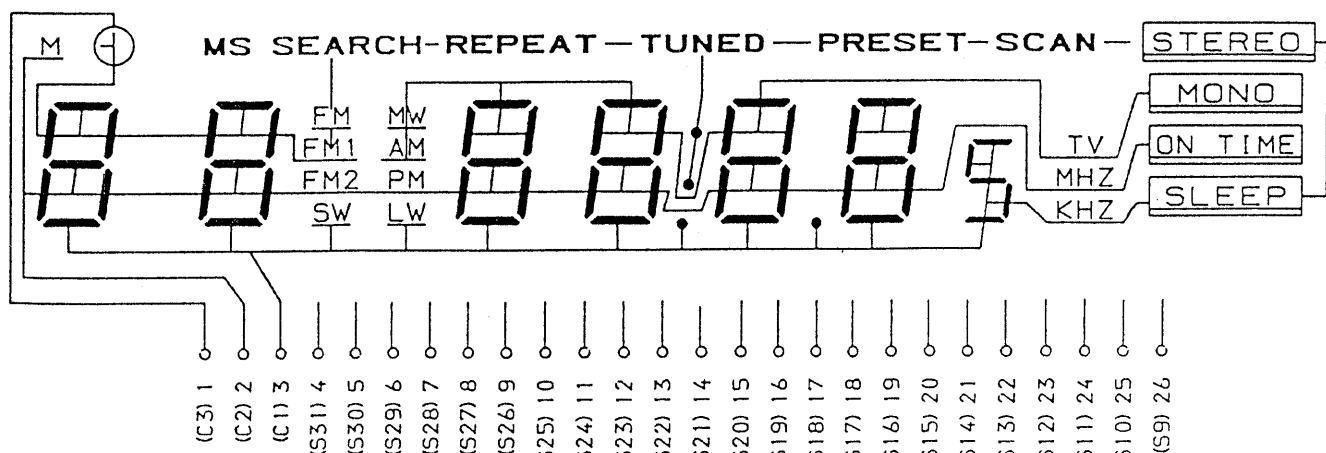
| Pin No. | Pin Name | I/O | Description                                                                                           |
|---------|----------|-----|-------------------------------------------------------------------------------------------------------|
| 1       | SEG28    | O   | } Segment output terminal for LCD.                                                                    |
| 3       | 3        |     |                                                                                                       |
| 4       | SEG31    |     |                                                                                                       |
| 5       | COM1     | O   | } Common output terminal for LCD.                                                                     |
| 6       | 6        |     |                                                                                                       |
| 7       | COM3     |     |                                                                                                       |
| 8       | COM4     | —   | Not used.                                                                                             |
| 9       | N. C     | —   | Not used.                                                                                             |
| 10      | VLC      | I   | LCD drive voltage setting. Normal: VSS level (GND)                                                    |
| 11      | P10      | O   | Power switch (ON = "H").                                                                              |
| 12      | KO1      | O   | } Key matrix output port.                                                                             |
| 13      | 13       |     |                                                                                                       |
| 14      | KO3      |     |                                                                                                       |
| 15      | VSS      | —   | GND                                                                                                   |
| 16      | KO4      | O   | } Key matrix output port.                                                                             |
| 18      | 18       |     |                                                                                                       |
| 19      | KO7      |     |                                                                                                       |
| 20      | TEST     | —   | Not used.                                                                                             |
| 21      | XIN      | I   | 4.19 MHz clock oscillation input.                                                                     |
| 22      | XOUT     | O   | 4.19 MHz clock oscillation output.                                                                    |
| 23      | RESET    | I   | Reset signal input. ("L" when reset.)                                                                 |
| 24      | HOLD     | I   | Hold signal input. (+5V)                                                                              |
| 25      | KI1      | I   | } Key matrix input port.                                                                              |
| 27      | 27       |     |                                                                                                       |
| 28      | KI4      |     |                                                                                                       |
| 29      | REMOTE   | —   | Wireless remote control input. (Not used.)                                                            |
| 30      | T2       | O   | Power VOL DOWN. (Not used.)                                                                           |
| 31      | INT1     | O   | Power VOL UP. (Not used.)                                                                             |
| 32      | MUTE     | O   | Muting output. ("L" when the mute is on.)                                                             |
| 33      | VDD      | —   | +5V power supply.                                                                                     |
| 34      | S1       | I   | Tuner data input.                                                                                     |
| 35      | S0       | O   | Tuner data output.                                                                                    |
| 36      | SCLK     | O   | Tuner data clock.                                                                                     |
| 37      | BUS0     | I/O | Send/receive bus line to/from CD processor. (Not used.)                                               |
| 39      | 39       |     |                                                                                                       |
| 40      | BUS3     |     |                                                                                                       |
| 41      | CCE      | I/O | Command and data processing control I/O.                                                              |
| 42      | BUCK     | O   | Command and data send/receive clock output.                                                           |
| 43      | PUINNER  | I   | Detects that the pickup is positioned at the most internal cylinder. Most internal cylinder when "L". |
| 44      | DOOR     | I   | CD door OPEN/CLOSE detection. CLOSE when "L" (+5V).                                                   |
| 45      | CD       | I   | Function CD. CD when "L".                                                                             |

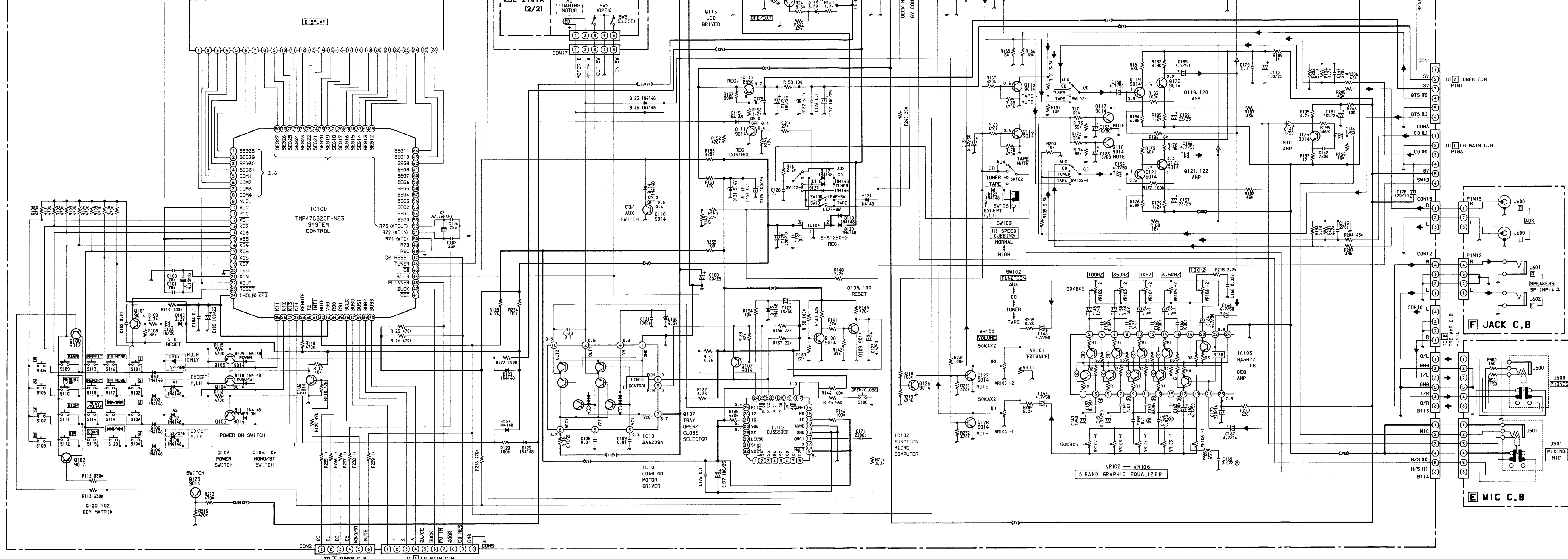
| Pin No. | Pin Name | I/O | Description                                                           |
|---------|----------|-----|-----------------------------------------------------------------------|
| 46      | TUNER    | I   | Function TUNER. TUNER when "L".                                       |
| 47      | CD RESET | I   | CD circuit initialize signal input. (Reset when "L".)                 |
| 48      | REC      | I   | Tape recorder REC operation detection signal. (GND)                   |
| 49      | R70      | O   | Tape recorder synchronization stop output. Stop when "L". (Not used.) |
| 50      | PLLCE    | O   | Tuner CE. Controls the tuner PLL IC.                                  |
| 51      | X IN     | I   | 32.768kHz clock oscillation input for display.                        |
| 52      | X OUT    | O   | 32.768kHz clock oscillation output for display. (Not used.)           |
| 53      | SEG 0    | O   | } Not used.                                                           |
| 61      | SEG 8    |     |                                                                       |
| 62      | SEG 9    | O   | } Segment output terminal for LCD display.                            |
| 80      | SEG 27   |     |                                                                       |

## LCD SEGMENT



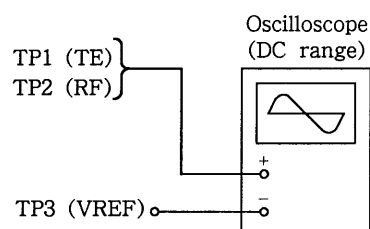
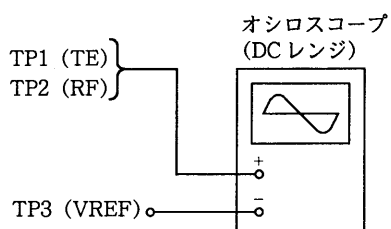
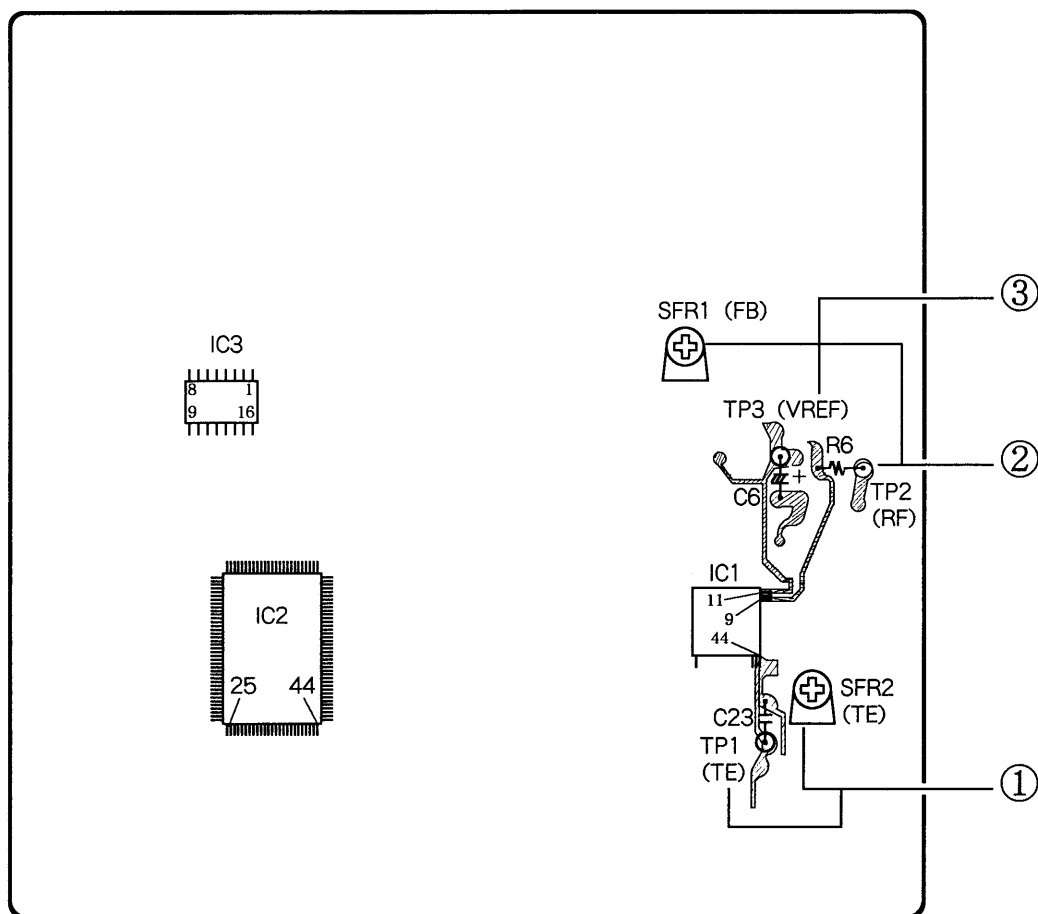
## LCD COMMON





ADJUSTMENT  
(CD SECTION)

**C** CD MAIN C.B



(注) : ・ 各調整時にはオシロスコプの⊖側をTP3 (VREF) に接続して下さい。

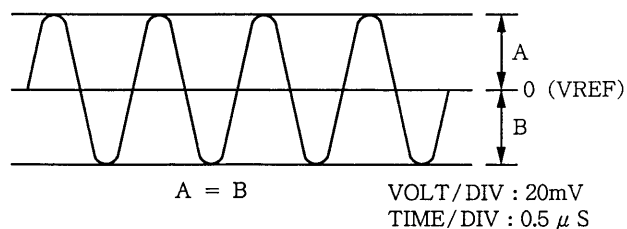
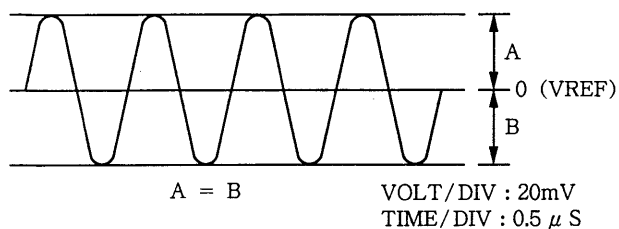
Note : ・ Connect the negative side ( - ) of an oscilloscope to TP3 (VREF) when making adjustment.

1. トラッキングバランス調整

- 1) テストポイントTP1 (TE)、TP3 (VREF) にオシロスコプを接続する。
- 2) テストディスクTCD-782 (YEDS-18) を入れ、PLAYボタンを押す。
- 3) REPEATボタンを押してREPEATモードにする。
- 4)  ボタンをくり返し押す。(MS状態)
- 5) SFR2を調整し、オシロスコプのトラバース波形を、上下対称にする。

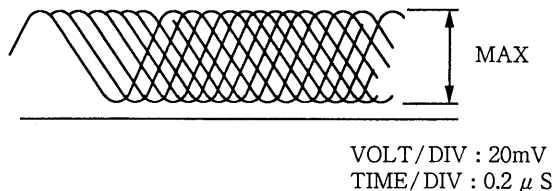
1. Tracking Balance Adjustment

- (1) Connect an oscilloscope to TP1 (TE) and TP3 (VREF).
- (2) Insert the TCD-782 (YEDS-18) disc and push the PLAY button.
- (3) Push the REPEAT button to set to the REPEAT mode.
- (4) Push and hold the  button. (MS mode.)
- (5) Adjust SFR2 (TB) to symmetrize the traverse waveform the to base line.



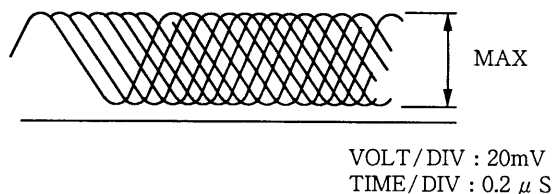
## 2. フォーカス・バランス調整

- 1) テストポイント TP2 (RF)、TP3 (VREF) にオシロスコープを接続する。
- 2) テストディスク TCD-782 (YEDS-18) を入れ、PLAY ボタンを押す。
- 3) SFR1 を調整し、オシロスコープの波形の振幅を最大にする。



## 2. Focus Balance Adjustment

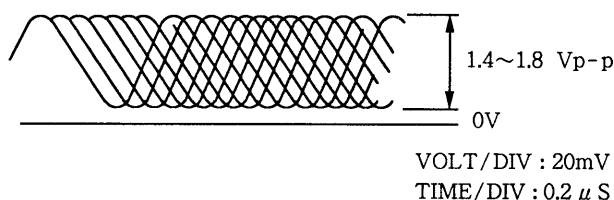
- (1) Connect an oscilloscope to TP2 (RF) and TP3 (VREF).
- (2) Insert the TCD-782 (YEDS-18) disc and push the PLAY button.
- (3) Adjust SFR1 (FB) so that the amplitude of the oscilloscope waveform is maximum.



## 3. レーザーパワー調整

- 1) テストポイント TP2 (RF)、TP3 (VREF) にオシロスコープを接続する。
- 2) POWER スイッチを ON にする。
- 3) テストディスク TCD-782 (YEDS-18) を入れてPLAY ボタンを押す。
- 4) レーザーピックアップ部の VR1 を調整し、波高値を 1.4~1.8Vp-p にする。

RF 信号波形

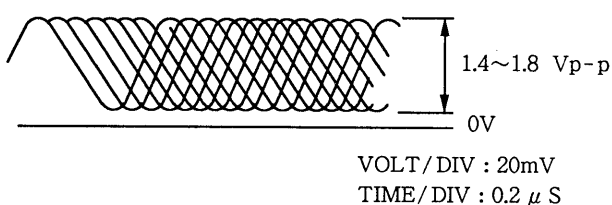


## 3. Laser Power Adjustment

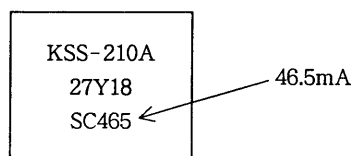
Make the RF waveform check when replacing or repairing the optical block.

- (1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
- (2) Insert the test disc TCD-782 (YEDS-18) and push the PLAY button.
- (3) Adjust VR1 on the optical block so that the amplitude 1.4~1.8Vp-p.

RF Signal wave

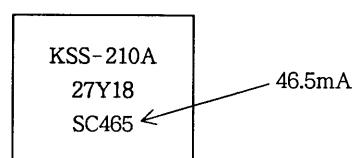


(注) レーザー電流の確認は R13 (10 Ω の両端電圧) で行えます。レーザーピックアップの裏側のラベルの電流値に対して ±6.0mA に入っている事。



$$\text{レーザー電流 } I_{op} = \frac{\text{R13 の両端電圧}}{10 \Omega}$$

Note: The current of the laser signal can be checked with the voltages on both sides of R13 (10 Ω). The difference for the specified value shown on the label must be within ±6.0mA.

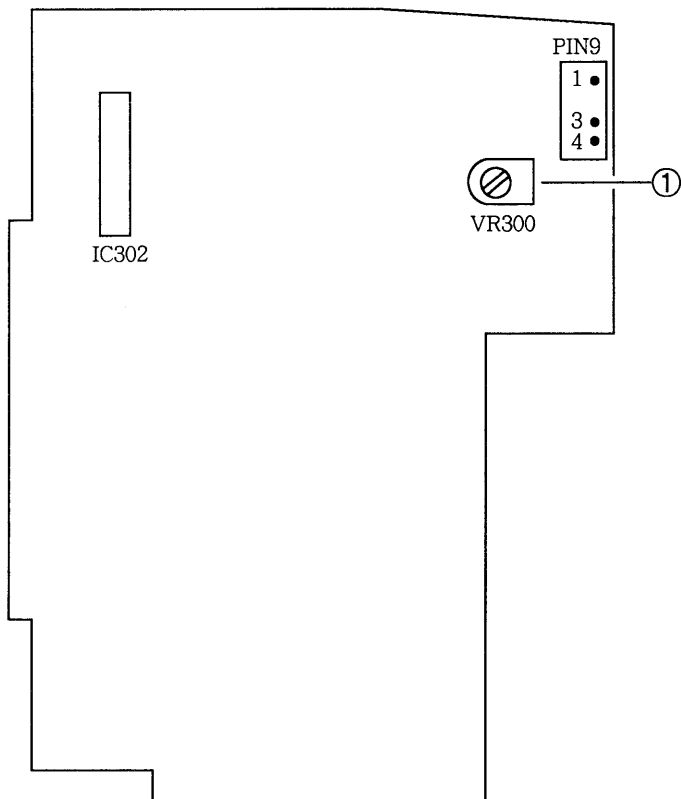


$$\text{Laser current } I_{op} = \frac{\text{Voltage across R13}}{10 \Omega}$$

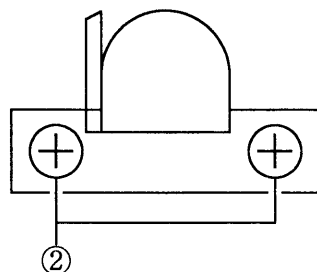


(DECK SECTION)

**B** PRE AMP C.B



RPH (DECK1) / PH (DECK2)



1. テープスピード調整 (デッキ1, デッキ2)

条件 : ・テストテープ : TTA-100 (TTA-111S)

・調整箇所 : VR300

方法 : デッキ1でテストテープを再生し、3000Hzになる様に調整する。調整後、デッキ2が3000Hz $\pm$ 55Hzである事を確認する。

2. アジマス調整 (デッキ1, デッキ2)

条件 : ・テストテープ : TTS-320 (TTA-113B, TCC-152)

・調整箇所 : アジマス調整ネジ

方法 : テストテープの8kHzを再生し、出力が最大になる様に調整する。FWD PLAYモード、REV PLAYモードの各モードを調整する。

1. Tape Speed Adjustment

Condition : ・Test tape : TTA-100 (TTA-111S)

・Adjustment location : VR300

Method : Play back the test tape with Deck 1 and adjust so that the output frequency is 3000Hz. After the adjustment, check that the frequency of Deck 2 is 3000  $\pm$  55Hz.

2. Azimuth Adjustment (Deck 1 and 2)

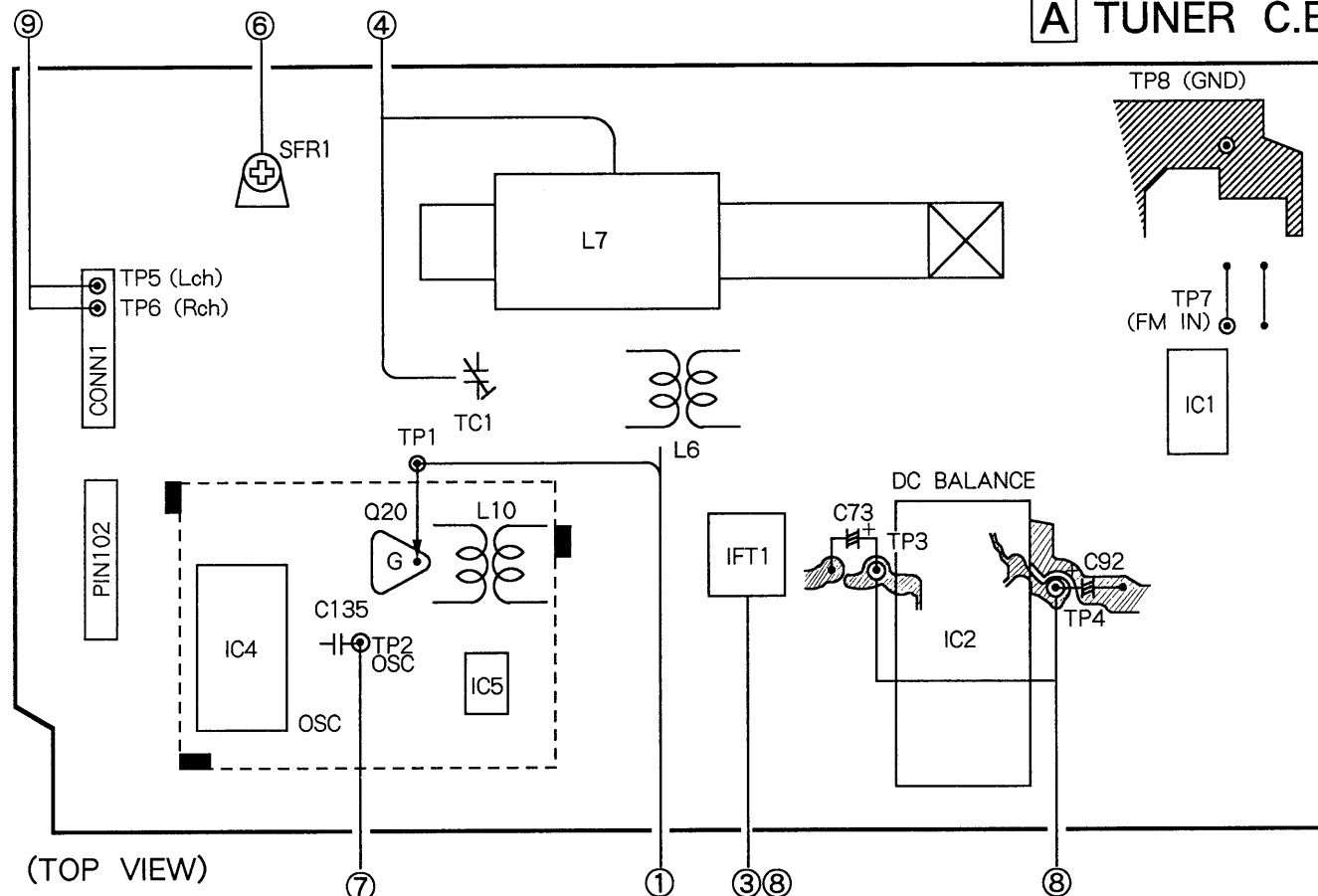
Condition : ・Test tape : TTS-320 (TTA-113B and TCC-152)

・Adjustment location : Azimuth adjustment screw

Method : Play back the 8kHz portion of the test tape and adjust so that the output is maximum. Make the adjustment in the FWD PLAY and REV PLAY modes.

(TUNER SECTION : CA - B500)

**A** TUNER C.B



1. AM VT調整

- 1) ファンクションをAMにし、周波数表示を522kHzにする。
- 2) TP1 (Q20 2SK209のゲート) のVT電圧が $1.4 \pm 0.05V$ になる様にAM OSC コイルL6を調整する。
- 3) 周波数表示を1629kHzにし、VT電圧が $7.2V (+0.8V - 0.4V)$ である事を確認する。

2. FM VT確認

- 1) ファンクションをFMにする。
- 2) 下記の周波数表示にしてTP1のVT電圧が規格内である事を確認する。  
 FM 76MHz :  $1.4 \pm 0.4V$   
 108MHz :  $8.1 \pm 0.5V$

3. FM IF調整

IFT1 ..... (10.7MHz)

4. AMトラッキング調整

L7 ..... 603kHz  
 TC1 ..... 1404kHz

5. FMトラッキング確認

IHF感度が下記の値になる事を確認する。

76MHz .....  $16 \pm 6dB$   
 90MHz .....  $13 \pm 6dB$   
 3CH .....  $12 \pm 6dB$

6. FMチューニング調整

条件 : ・調整箇所 : SFR1

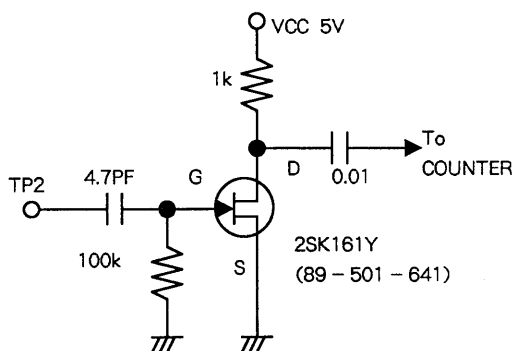
方法 : FM76.0MHzで、 $30 \pm 1dB$ になる様にSFR1を調整します。

7. OSC周波数確認

条件 : ・テストポイント : TP2

方法 : テストポイントにバッファ回路を接続します。

FM周波数を76.0MHzにし、発振周波数が $65.25MHz \pm 0.001MHz$ である事を確認します。



8. FM DCバランス調整

条件 : ・テストポイント : TP3 (IC2 4pin)  
 TP4 (IC2 28pin)

SSG : 76MHz、54dB

・調整箇所 : IFT1

方法 : TP3、TP4の電圧が $0V \pm 20mV$ になる様IFT1を調整する。

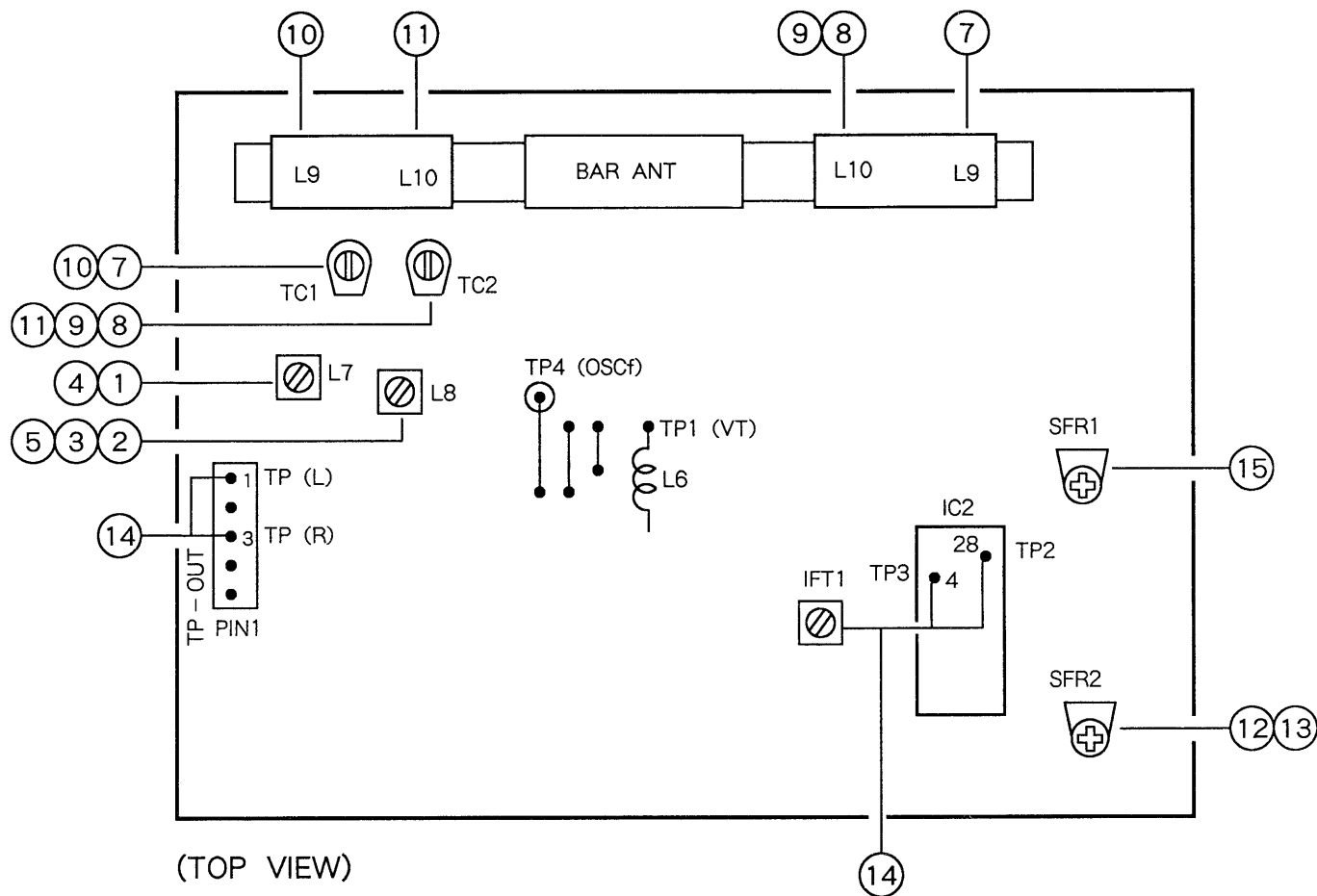
この時表示のTUNEDが点灯する事を確認する。

9. FMセパレーション確認

条件 : ・テストポイント : TP5 (Lch CNP1 1pin)  
 TP6 (Rch CNP1 3pin)

SSG : 76MHz、54dB

方法 : FM 76MHz STEREOでチャンネル間セパレーションが23dB以上ある事を確認する。



## &lt; RADIO SECTION &gt;

## 1. MW VT Adjustment (H)

Settings : • Test point : TP1

• Adjustment location : L7

Method : Set to AM (MW), 531kHz and adjust so that the test point becomes  $1.4V \pm 0.01V$ .

## 2. MW VT Adjustment (E, Z)

Settings : • Test point : TP1

• Adjustment location : L8

Method : Set to AM (MW), 522kHz and adjust so that the test point becomes  $1.4V \pm 0.01V$ .

## 3. AM VT Adjustment (LH, U)

Settings : • Test point : TP1

• Adjustment location : L8

Method : Set to AM (MW), 530kHz and adjust so that the test point becomes  $1.5V \pm 0.01V$ .

## 4. LW VT Adjustment (E, Z)

Settings : • Test point : TP1

• Adjustment location : L7

Method : Set to LW, 153kHz and adjust so that the test point becomes  $1.9V \pm 0.01V$ .

## 5. SW VT Adjustment (H)

Settings : • Test point : TP1

• Adjustment location : L8

Method : Set to SW, 3.8MHz and adjust so that the test point becomes  $1.2V \pm 0.01V$ .

## 6. FM VT Check

Settings : • Test point : TP1

Method : Set to FM, 87.5MHz and check so that the test point becomes  $3.4V \pm 0.3V$ .

## 7. MW Tracking Adjustment (H)

L9 ..... 603kHz

TC1 ..... 1404kHz

## 8. AM Tracking Adjustment (LH, U)

L10 ..... 600kHz

TC2 ..... 1400kHz

## 9. MW Tracking Adjustment (E, Z)

L10 ..... 603kHz

TC2 ..... 1404kHz

## 10. LW Tracking Adjustment (E, Z)

L9 ..... 153kHz

TC1 ..... 288kHz

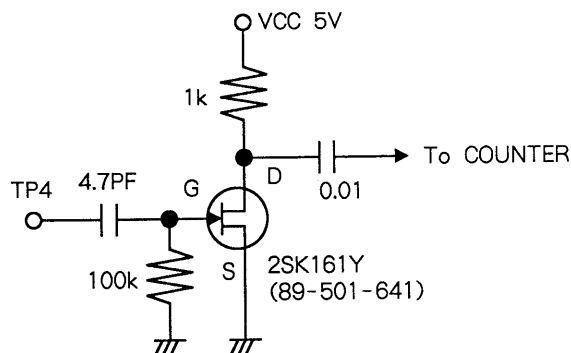
## 11. SW Tracking Adjustment (H)

L10 ..... 3.8MHz

TC2 ..... 12.5MHz

12. AM (MW) AUTO STOP LEVEL Adjustment (H, U, LH)  
 Settings : • Adjustment location : SFR2  
 • Input level :  $60 \pm 5\text{dB}$   
 Method : Set to MW, 1404kHz (H), 1400kHz (U, LH) and adjust TUNED Indicator (LCD1) to light on by SFR2.  
 After that, TUNED Indicator (LCD1) goes out by 2dB down.
13. LW AUTO STOP LEVEL Adjustment (E, Z)  
 Settings : • Adjustment location : SFR2  
 • Input level :  $58 \pm 5\text{dB}$   
 Method : Set to LW, 207kHz and adjust TUNED Indicator (LCD1) to light on by SFR2.  
 After that, TUNED Indicator (LCD1) goes out by 2dB down.
14. DC Balance Adjustment  
 Settings : • Test point : TP2, TP3 (DC balance)  
 TP-OUT (PIN1) (distortion)  
 • Adjustment location : IFT1  
 Method : Set to FM, 98.0MHz and adjust IFT1 so that TP2 and TP3 output becomes  $0\text{V} \pm 0.01\text{V}$ .

15. FM AUTO STOP LEVEL Adjustment  
 Settings : • Adjustment location : SFR1  
 • Input level :  $31 \pm 5\text{dB}$   
 Method : Set to FM, 98.0MHz and adjust TUNED Indicator (LCD1) to light on by SFR1.  
 After that, TUNED Indicator (LCD1) goes out by 2dB down.
16. FM OSC FREQ. Check  
 Settings : • Test point : TP4  
 Method : Connect a buffer to TP2. Set to FM 87.5MHz and check that the frequency at test point becomes  $65.3 \pm 0.01\text{MHz}$ .



## PRACTICAL SERVICE FIGURE

CA-B500  
 <ラジオ部>

|            |   |                                    |
|------------|---|------------------------------------|
| 雑音制限感度     | : |                                    |
| (THD, 3%)  |   | FM 19dB以下 (at 90.0MHz)             |
| (S/N 10dB) |   | AM $43 \pm 6\text{dB}$ (at 999kHz) |
| 中間周波数      | : | FM 10.7MHz                         |
|            |   | AM 450kHz                          |
| FMステレオ分離度  | : | FM $28 \pm 5\text{dB}$ (90MHz)     |

<テープレコーダ部>

|               |   |                                 |
|---------------|---|---------------------------------|
| バイアス周波数       | : | $71.5 \pm 0.5\text{kHz}$        |
| 消去率           | : | 50dB                            |
| 歪率 (THD, 10%) | : | 48%以下 (PB)                      |
| 信号対雑音比        | : | 40dB (DC/AC, PB)                |
|               |   | 35dB (DC/AC, REC/PB)            |
| 雑音レベル (PB)    | : | 1.0mV以下 (DC/AC, MIN)            |
| テープスピード       | : | $3000 \pm \frac{1}{2}\text{Hz}$ |
| ワウフラッター       | : | 0.35%以下 (JIS)                   |
| 巻き取りトルク       | : | 40~70g-cm                       |
| 早送りトルク        | : | 50g-cm以下                        |
| 巻き戻しトルク       | : | 50g-cm以下                        |

CA-DW500  
 <RADIO SECTION>

H MODEL

|               |                                 |
|---------------|---------------------------------|
| Sensitivity : |                                 |
| (IHF, THD 3%) | FM Less than 24dB (98MHz)       |
| (S/N 10dB)    | MW $50 \pm 4\text{dB}$ (999kHz) |
| (S/N 10dB)    | SW Less than 48dB (8MHz)        |

LH, U MODELS

|               |                                  |
|---------------|----------------------------------|
| Sensitivity : |                                  |
| (IHF, THD 3%) | FM Less than 24dB (98MHz)        |
| (S/N 10dB)    | AM $50 \pm 4\text{dB}$ (1000kHz) |

E, EE, Z MODELS

|               |                                 |
|---------------|---------------------------------|
| Sensitivity : |                                 |
| (IHF, THD 3%) | FM Less than 24dB (98MHz)       |
| (S/N 10dB)    | MW $50 \pm 4\text{dB}$ (999kHz) |
| (S/N 10dB)    | LW $54 \pm 4\text{dB}$ (207kHz) |

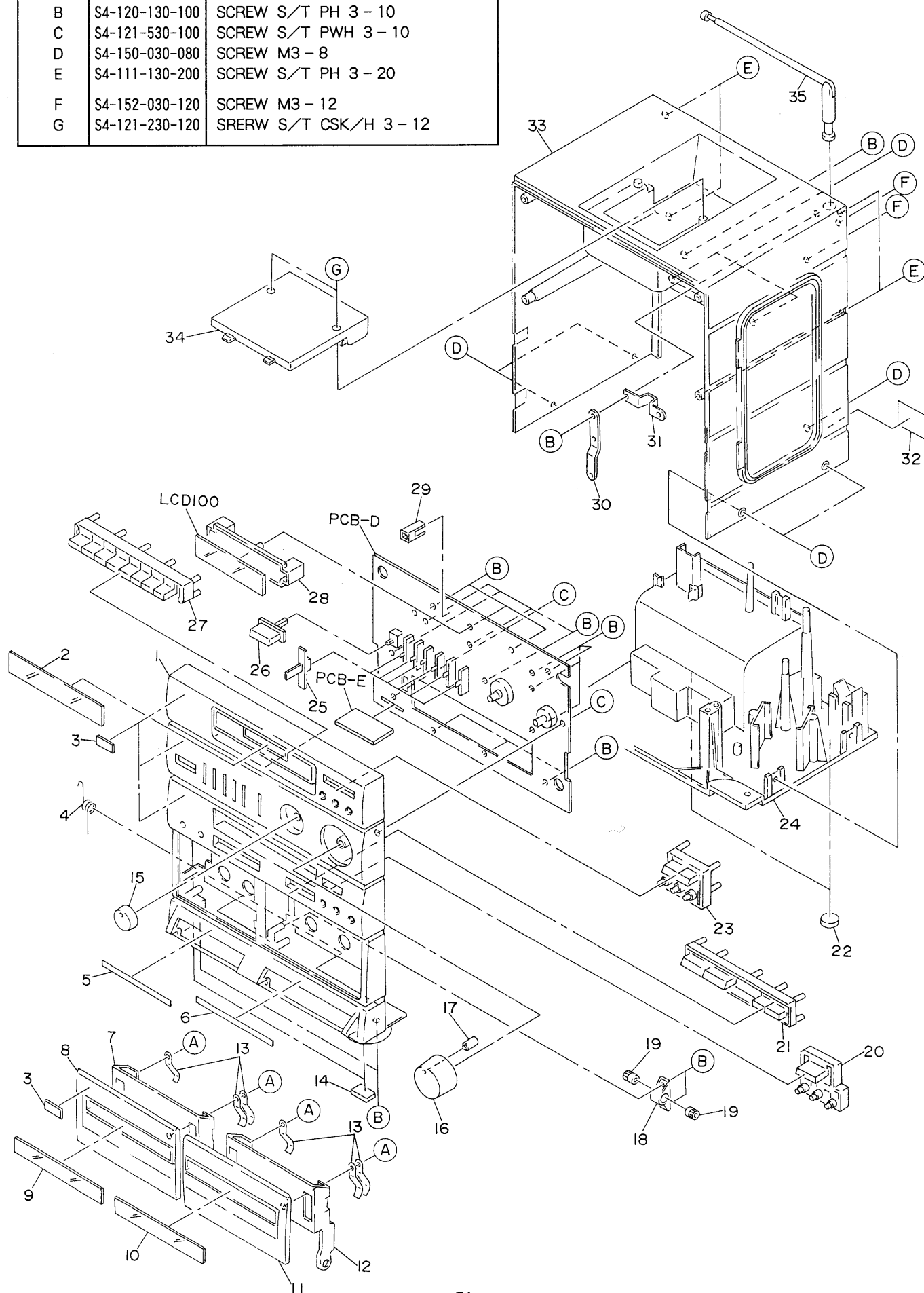
|                          |                             |
|--------------------------|-----------------------------|
| Intermediate frequency : | FM 10.7MHz                  |
|                          | AM 450kHz                   |
| FM stereo separation :   | $27 \pm 3\text{dB}$ (98MHz) |

<TAPE RECORDER SECTION>

|                            |                                 |
|----------------------------|---------------------------------|
| Recording bias frequency : | $71.5 \pm 0.5\text{kHz}$        |
| Erasing ratio (W/FILTER) : | 50dB                            |
| Distortion (T, H, D 10%) : | Less than 4.8% (PB)             |
| S/N ratio :                | 40dB (AC/DC, PB)                |
|                            | 35dB (AC/DC, REC/PB)            |
| Noise (PB) :               | Less than 1mV                   |
|                            | (AC/DC, MIN)                    |
| Tape speed :               | $3000 \pm \frac{1}{2}\text{Hz}$ |
| Wow & flutter :            | 0.35% (JIS, UN WTD)             |
| Take-up torque :           | 40~70g-cm                       |
| F.F & REW torque :         | Less than 50g-cm                |

# EXPLODED VIEW - 1

| REF. NO. | PART NO.       | DESCRIPTION            |
|----------|----------------|------------------------|
| A        | S4-120-120-060 | SCREW TAP PH 2 - 6     |
| B        | S4-120-130-100 | SCREW S/T PH 3 - 10    |
| C        | S4-121-530-100 | SCREW S/T PWH 3 - 10   |
| D        | S4-150-030-080 | SCREW M3 - 8           |
| E        | S4-111-130-200 | SCREW S/T PH 3 - 20    |
| F        | S4-152-030-120 | SCREW M3 - 12          |
| G        | S4-121-230-120 | SRERW S/T CSK/H 3 - 12 |



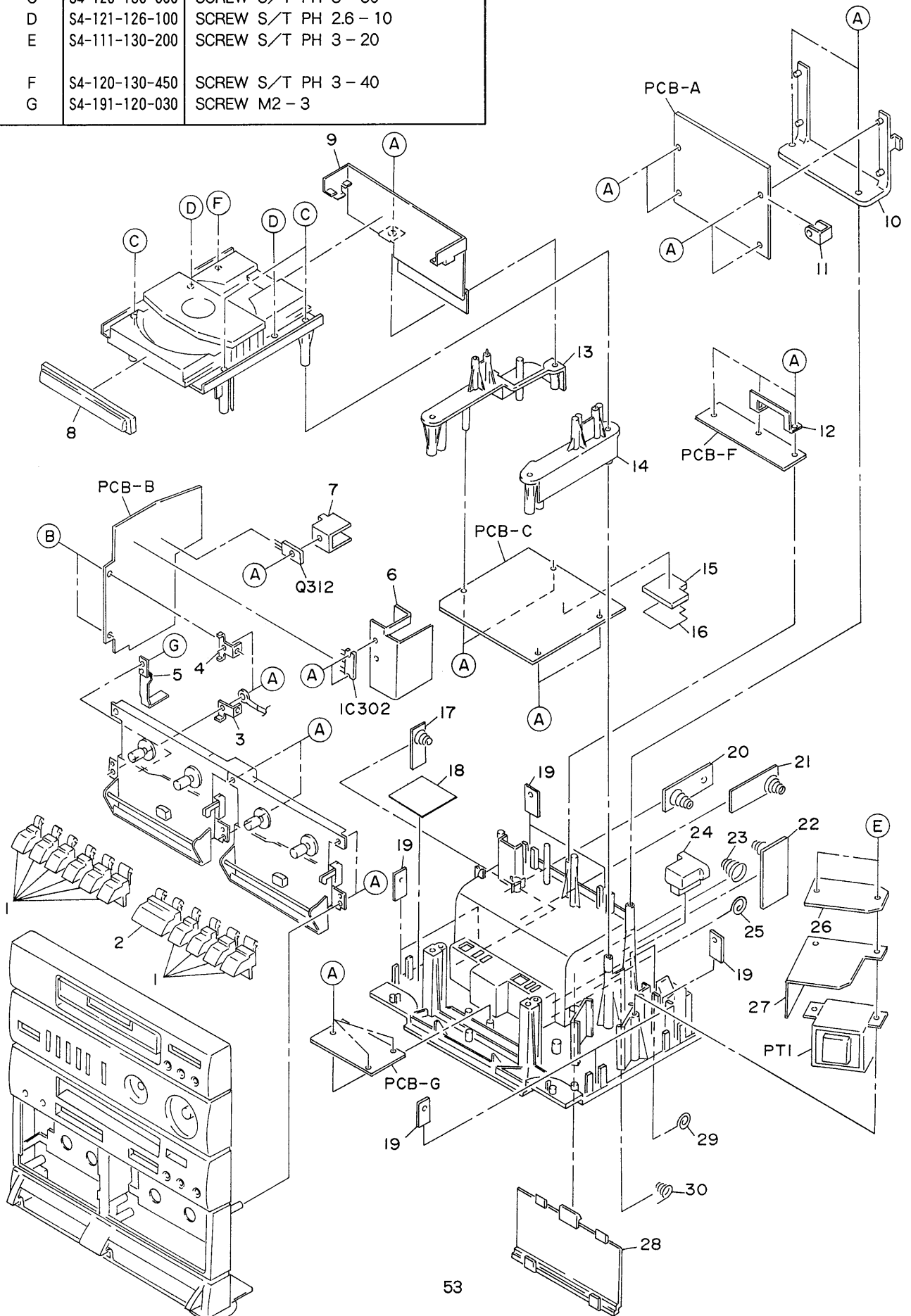


# MECHANICAL PARTS LIST

| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.        | カンリ<br>NO. | DESCRIPTION               | COMMON<br>MODEL | Q'TY |
|------------------------|-------------|-----------------|------------|---------------------------|-----------------|------|
|                        | 1-1         | ★S7-358-001-020 | 2A         | FRONT CABI (CA-B500)      |                 | 1    |
|                        | 1-1         | ★S7-358-000-010 |            | FRONT CABI (CA-DW500)     |                 | 1    |
|                        | 1-2         | ★S7-358-000-040 | 1B         | LCD DISPLAY LENS          |                 | 1    |
|                        | 1-3         | ★S7-358-000-240 | 0E         | LOGO                      |                 | 4    |
|                        | 1-4         | ★S4-058-000-070 | 0E         | CASSETTE DOOR SPRING      |                 | 2    |
|                        | 1-5         | ★S6-045-800-010 | 0E         | CASSETTE FUNCTION INLAY A |                 | 1    |
|                        | 1-6         | ★S6-045-800-020 | 0E         | CASSETTE FUNCTION INLAY B |                 | 1    |
|                        | 1-7         | ★S7-358-000-150 | 1A         | CASSETTE DOOR A           |                 | 1    |
|                        | 1-8         | ★S7-358-000-180 | 1B         | CASSETTE DOOR COVER A     |                 | 1    |
|                        | 1-9         | ★S7-358-000-170 | 1B         | CASSETTE DOOR LENS,A      |                 | 1    |
|                        | 1-10        | ★S7-358-000-360 | 1B         | CASSETTE DOOR LENS,B      |                 | 1    |
|                        | 1-11        | ★S7-358-000-190 | 1A         | CASSETTE DOOR COVER B     |                 | 1    |
|                        | 1-12        | ★S7-358-000-160 | 1A         | CASSETTE DOOR B           |                 | 1    |
|                        | 1-13        | ★S4-058-000-400 | 0E         | CASSETTE TAPE HOLD SPRING |                 | 4    |
|                        | 1-14        | ★S8-004-580-010 | 0E         | RUBBER FOOT               |                 | 2    |
|                        | 1-15        | ★S7-358-000-100 | 0E         | FUNCTION KNOB             |                 | 1    |
|                        | 1-16        | ★S7-358-000-110 | 0E         | VOLUME KNOB               |                 | 1    |
|                        | 1-17        | ★S7-358-000-130 | 0E         | VOL KNOB INDICATOR        |                 | 1    |
|                        | 1-18        | ★S7-358-000-220 | 0E         | DAMP GEAR HOUSING         |                 | 1    |
|                        | 1-19        | ★S7-358-000-230 | 0E         | DAMP GEAR                 |                 | 2    |
|                        | 1-20        | ★S7-358-000-080 | 1A         | CD MODE BUTTON            |                 | 1    |
|                        | 1-21        | ★S7-358-000-050 | 1B         | CD CONTROL BUTTON         |                 | 1    |
|                        | 1-22        | ★S8-000-400-170 | 0E         | FOOT DIA 12 - 1.6MM       |                 | 2    |
|                        | 1-23        | ★S7-358-000-070 | 1A         | FM MODE BUTTON            |                 | 1    |
|                        | 1-24        | ★S7-358-000-030 | 1H         | BOTTOM CABI               |                 | 1    |
|                        | 1-25        | ★S7-358-000-120 | 0E         | SLIDER KNOB               |                 | 6    |
|                        | 1-26        | ★S7-358-000-090 | 0E         | DUBBING BUTTON            |                 | 1    |
|                        | 1-27        | ★S7-358-000-060 | 1A         | BAND BUTTON               |                 | 1    |
|                        | 1-28        | ★S7-358-000-250 | 0E         | LCD HOLDER                |                 | 1    |
|                        | 1-29        | ★S7-358-000-370 | 0E         | LED HOLDER                |                 | 1    |
|                        | 1-30        | ★S4-058-000-030 | 0E         | ANTT CONN PLATE           |                 | 1    |
|                        | 1-31        | ★S4-058-000-040 | 0E         | ANTT HOLDER               |                 | 1    |
|                        | 1-32        | ★S6-045-800-030 | 0E         | VOLTAGE INLAY             |                 | 1    |
|                        | 1-33        | ★S7-358-000-020 | 2M         | BACK CABI                 |                 | 1    |
|                        | 1-34        | ★S7-358-000-280 | 1B         | HANDLE PLATE              |                 | 1    |
|                        | 1-35        | ★S4-058-000-160 | 1D         | ANTENNA                   |                 | 1    |

## EXPLODED VIEW – 2

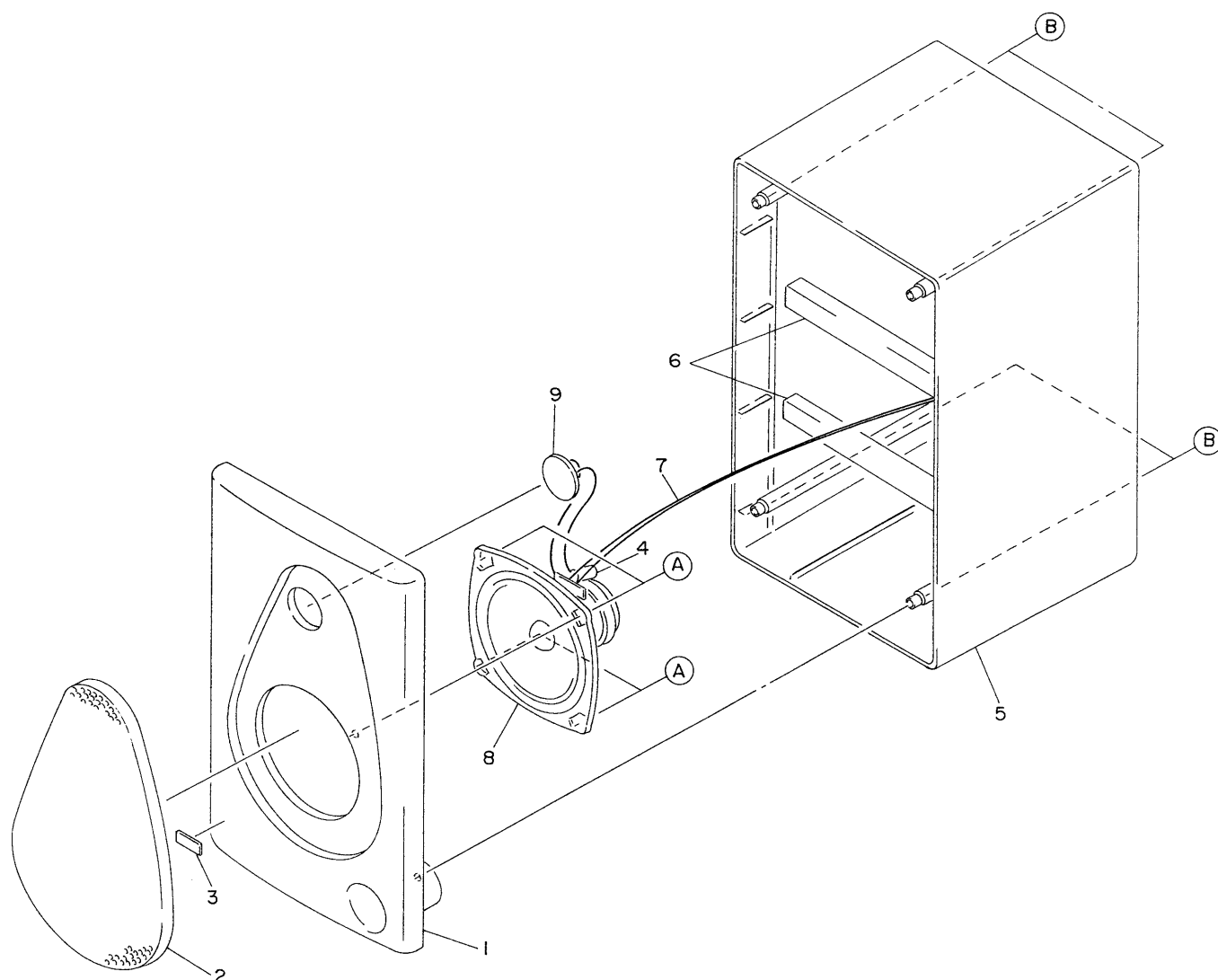
| REF. NO. | PART NO.       | DESCRIPTION           |
|----------|----------------|-----------------------|
| A        | S4-120-130-100 | SCREW S/T PH 3 – 10   |
| B        | S4-150-030-040 | SCREW M3 – 4 NI       |
| C        | S4-120-130-600 | SCREW S/T PH 3 – 60   |
| D        | S4-121-126-100 | SCREW S/T PH 2.6 – 10 |
| E        | S4-111-130-200 | SCREW S/T PH 3 – 20   |
| F        | S4-120-130-450 | SCREW S/T PH 3 – 40   |
| G        | S4-191-120-030 | SCREW M2 – 3          |



| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.        | カンリ<br>NO. | DESCRIPTION                | COMMON<br>MODEL | Q'TY |
|------------------------|-------------|-----------------|------------|----------------------------|-----------------|------|
|                        | 2-1         | ★S7-358-000-210 | 0E         | CASSETTE BUTTON - SMALL    |                 | 10   |
|                        | 2-2         | ★S7-358-000-200 | 0E         | CASSETTE BUTTON - LARGE    |                 | 1    |
|                        | 2-3         | ★S4-058-000-180 | 0E         | MOUNT BRACKET LOWER        |                 | 1    |
|                        | 2-4         | ★S4-058-000-170 | 0E         | MOUNT BRACKET UPPER        |                 | 1    |
|                        | 2-5         | ★S4-058-000-060 | 0E         | REC LEVEL                  |                 | 1    |
|                        | 2-6         | ---             |            | HEAT SINK REV 1            |                 | 1    |
|                        | 2-7         | ---             |            | HEAT SINK (SMALL)          |                 | 1    |
|                        | 2-8         | ★S7-358-000-140 | 1A         | CD DOOR                    |                 | 1    |
|                        | 2-9         | ★S4-058-000-150 | 1A         | CD SHIELD PLATE            |                 | 1    |
|                        | 2-10        | ---             |            | PCB MOUNTING BRACKET       |                 | 1    |
|                        | 2-11        | ★S4-058-000-050 | 0E         | ANTT CONTACT PLATED        |                 | 1    |
|                        | 2-12        | ★S4-058-000-410 | 0E         | SPEAKER JACK MOUNT BRACKET |                 | 1    |
|                        | 2-13        | ★S7-358-000-400 | 1B         | CD BRACKET (L)             |                 | 1    |
|                        | 2-14        | ★S7-358-000-410 | 1B         | CD BRACKET (R)             |                 | 1    |
|                        | 2-15        | ---             |            | SHIELD PLATE CORT L PCB    |                 | 1    |
|                        | 2-16        | ---             |            | SHIELD PLATE CD PCB        |                 | 1    |
|                        | 2-17        | ★S4-058-000-100 | 0E         | BATT CONTACT COM SUM3      |                 | 1    |
|                        | 2-18        | ---             |            | SHIELD SHEET               |                 | 1    |
|                        | 2-19        | ★S4-051-400-070 |            | SCREW PLATE LENGTH 1.5MM   |                 | 7    |
|                        | 2-20        | ★S4-058-000-280 | 1A         | BATT CONTACT COM A, SUM1   |                 | 1    |
|                        | 2-21        | ★S4-058-000-290 | 1A         | BATT CONTACT COM B SUM1    |                 | 1    |
|                        | 2-22        | ★S4-058-000-130 | 1A         | BATT CONTACT COM SUM1      |                 | 1    |
|                        | 2-23        | ★S4-058-000-120 | 0E         | BATT CONTACT - SUM1        |                 | 1    |
|                        | 2-24        | ★S7-358-000-380 | 1B         | A/C SOCKET COVER           |                 | 1    |
|                        | 2-25        | ★S4-058-000-110 | 0E         | BATT CONTACT + SUM1        |                 | 1    |
|                        | 2-26        | ---             |            | TRANS SHIELD PLATE         |                 | 1    |
|                        | 2-27        | ---             |            | TRANS SHIELD PLATE         |                 | 1    |
|                        | 2-28        | ★S7-358-000-260 | 1A         | BATT DOOR                  |                 | 1    |
|                        | 2-29        | ★S4-058-000-080 | 0E         | BATT CONTACT + SUM3        |                 | 1    |
|                        | 2-30        | ★S4-058-000-090 | 0E         | BATT CONTACT - SUM3        |                 | 1    |

# EXPLODED VIEW – 3

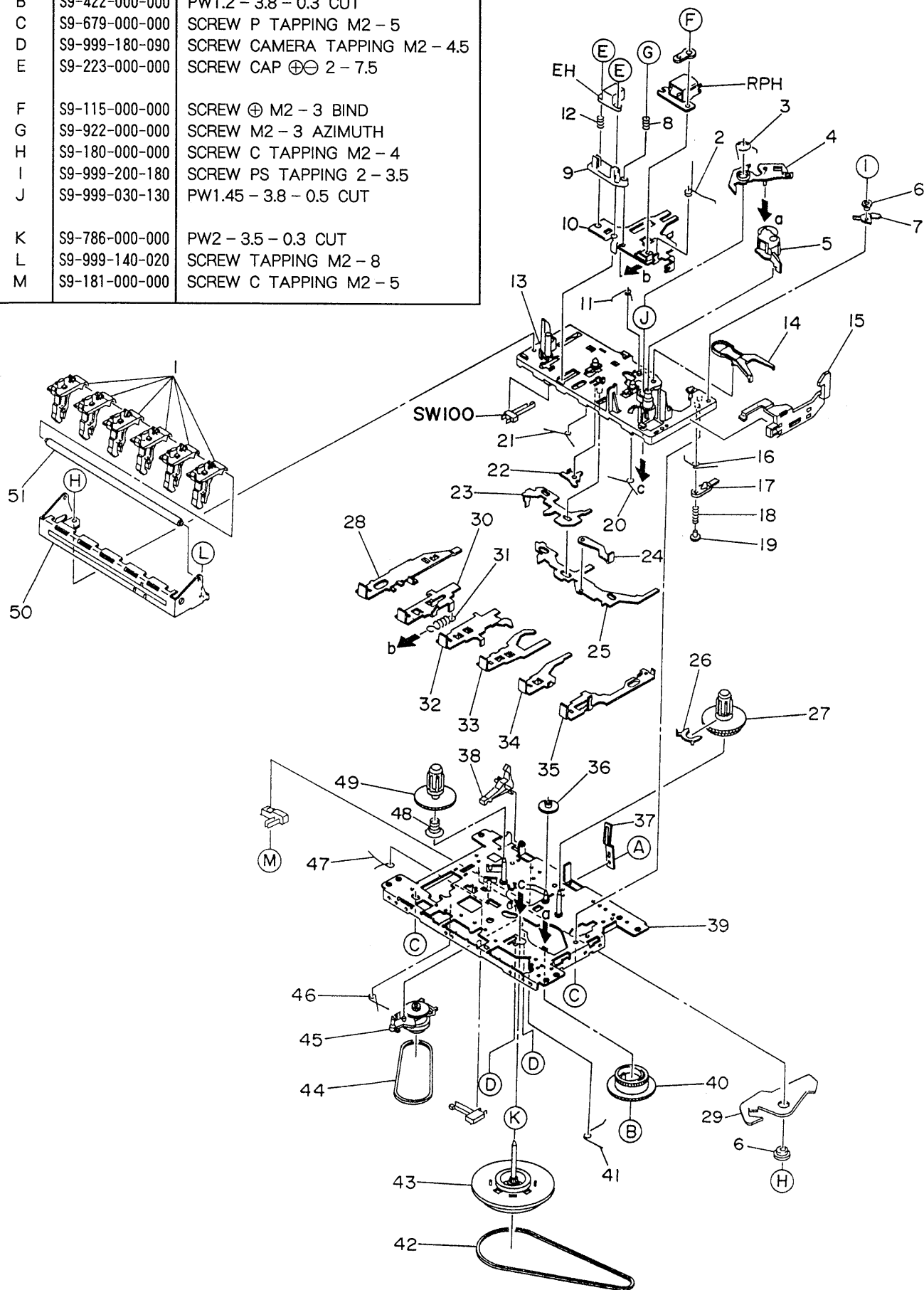
| REF. NO. | PART NO.       | DESCRIPTION          |
|----------|----------------|----------------------|
| A        | S4-121-530-100 | SCREW S/T PWH 3 – 10 |
| B        | S4-111-130-200 | SCREW S/T PH 3 – 20  |



| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.        | カンリ<br>NO. | DESCRIPTION           | COMMON<br>MODEL | Q'TY |
|------------------------|-------------|-----------------|------------|-----------------------|-----------------|------|
|                        | 3-1         | ★S7-358-000-340 | 1H         | SP FRONT CAB LEFT     |                 | 1    |
|                        | 3-1         | ★S7-358-000-330 | 1H         | SP FRONT CAB RIGHT    |                 | 1    |
|                        | 3-2         | ★S4-058-000-020 | 1E         | SPEAKER GRILLE, LEFT  |                 | 1    |
|                        | 3-2         | ★S4-058-000-010 | 1E         | SPEAKER GRILLE, RIGHT |                 | 1    |
|                        | 3-3         | ★S7-358-000-350 | 0E         | SP LOGO               |                 | 2    |
|                        | 3-4         | ★87-010-404-010 | 0E         | CAP. E 4.7uF – 50V    |                 | 2    |
|                        | 3-5         | ★S7-358-000-310 | 2A         | SP BOTTOM CAB LEFT    |                 | 1    |
|                        | 3-5         | ★S7-358-000-320 | 2A         | SP BOTTOM CAB RIGHT   |                 | 1    |
|                        | 3-6         | ★S8-058-000-010 | 1A         | WOODEN BAR HORIZONTAL |                 | 4    |
|                        | 3-7         | ★S5-755-800-000 | 1B         | SPEAKER CORD          |                 | 2    |
|                        | 3-8         | ★S5-615-800-000 | 2A         | SPEAKER               |                 | 2    |
|                        | 3-9         | ★S5-625-800-000 | 0E         | BUZZER DIA 27MM       |                 | 2    |

# EXPLODED VIEW - 4

| REF. NO. | PART NO.       | DESCRIPTION                       |
|----------|----------------|-----------------------------------|
| A        | S9-179-000-000 | SCREW C TAPPING M2 - 3            |
| B        | S9-422-000-000 | PW1.2 - 3.8 - 0.3 CUT             |
| C        | S9-679-000-000 | SCREW P TAPPING M2 - 5            |
| D        | S9-999-180-090 | SCREW CAMERA TAPPING M2 - 4.5     |
| E        | S9-223-000-000 | SCREW CAP $\oplus\ominus$ 2 - 7.5 |
| F        | S9-115-000-000 | SCREW $\oplus$ M2 - 3 BIND        |
| G        | S9-922-000-000 | SCREW M2 - 3 AZIMUTH              |
| H        | S9-180-000-000 | SCREW C TAPPING M2 - 4            |
| I        | S9-999-200-180 | SCREW PS TAPPING 2 - 3.5          |
| J        | S9-999-030-130 | PW1.45 - 3.8 - 0.5 CUT            |
| K        | S9-786-000-000 | PW2 - 3.5 - 0.3 CUT               |
| L        | S9-999-140-020 | SCREW TAPPING M2 - 8              |
| M        | S9-181-000-000 | SCREW C TAPPING M2 - 5            |

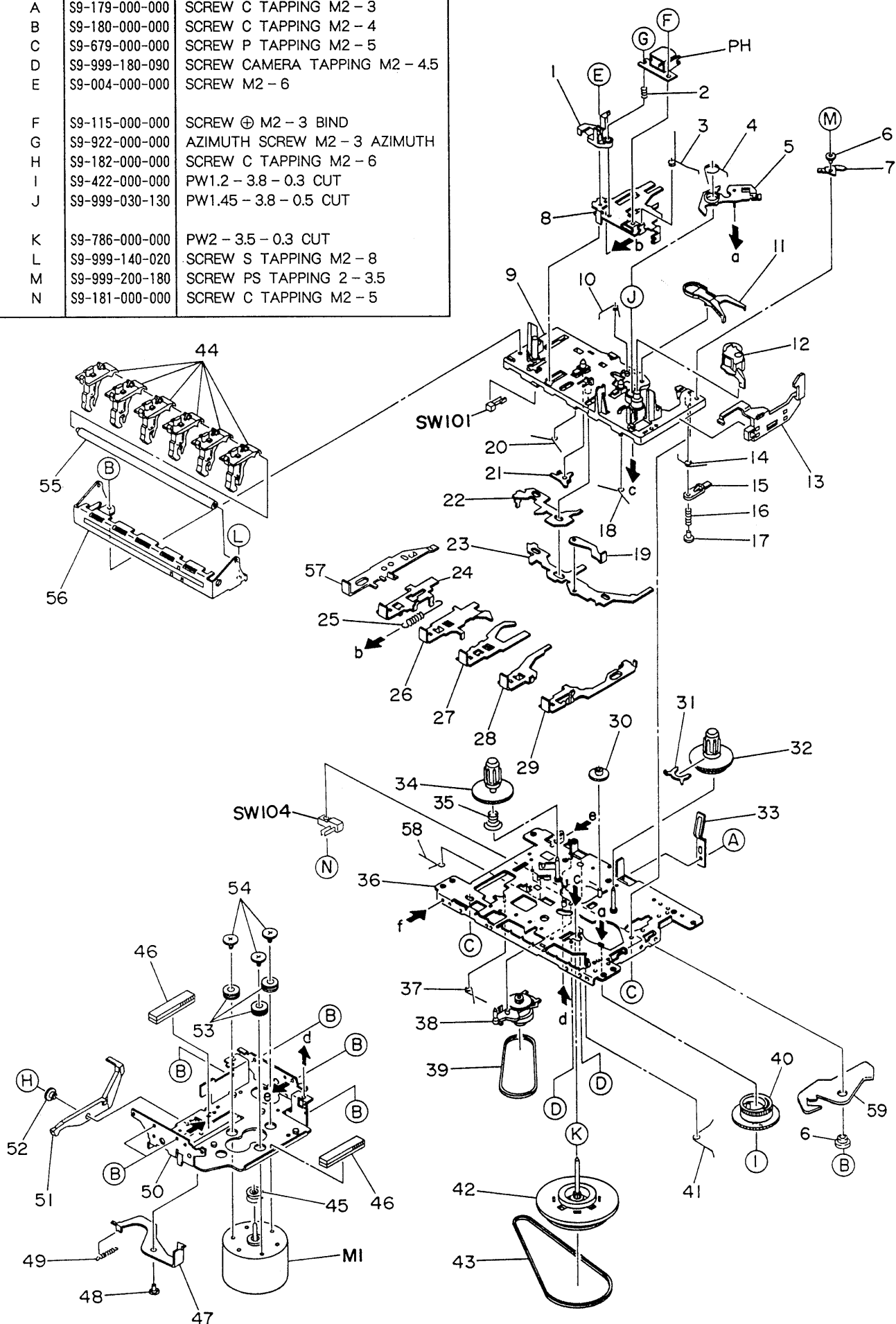


| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.        | カンリ<br>NO. | DESCRIPTION               | COMMON<br>MODEL | Q'TY |
|------------------------|-------------|-----------------|------------|---------------------------|-----------------|------|
|                        | 4-1         | ★S1-821-310-070 | 0E         | LEVER, OPERATION          |                 | 6    |
|                        | 4-2         | ★S1-921-030-090 | 0E         | P - SPRING, PANEL         |                 | 1    |
|                        | 4-3         | ★S1-921-260-050 | 0E         | SPRING, GEAR PLATE        |                 | 1    |
|                        | 4-4         | ★S1-921-265-020 | 1B         | GEAR PLATE ASSY           |                 | 1    |
|                        | 4-5         | ★S1-921-043-100 | 1C         | PINCH ROLLER ARM ASSY     |                 | 1    |
|                        | 4-6         | ★S1-921-140-370 | 0E         | COLLAR, P ARM             |                 | 2    |
|                        | 4-7         | ★S1-921-140-340 | 1A         | ARM, P                    |                 | 1    |
|                        | 4-8         | ★S1-821-030-070 | 0E         | SPRING, AZIMUTH           |                 | 1    |
|                        | 4-9         | ★S1-921-030-060 | 0E         | BASE, HEAD                |                 | 1    |
|                        | 4-10        | ★S1-921-030-140 | 1A         | PANEL, HEAD               |                 | 1    |
|                        | 4-11        | ★S1-921-141-8A0 | 0E         | M - SPRING, CONTROL       |                 | 1    |
|                        | 4-12        | ★S1-821-030-080 | 0E         | SPRING, EH                |                 | 1    |
|                        | 4-13        | ★S1-921-143-160 | 1C         | BASE ASSY                 |                 | 1    |
|                        | 4-14        | ★S1-921-260-4A0 | 0E         | LEVER, SENSING            |                 | 1    |
|                        | 4-15        | ★S1-921-130-020 | 0E         | LEVER, EJECT SLIDE        |                 | 1    |
|                        | 4-16        | ★S1-921-140-130 | 0E         | P - SPRING, CONTROL       |                 | 1    |
|                        | 4-17        | ★S1-921-140-550 | 0E         | LEVER, PAUSE E            |                 | 1    |
|                        | 4-18        | ★S1-921-140-120 | 0E         | SPRING, PAUSE LEVER       |                 | 1    |
|                        | 4-19        | ★S1-921-140-110 | 0E         | STOPPER, PAUSE            |                 | 1    |
|                        | 4-20        | ★S1-921-140-150 | 0E         | SPRING, BUTTON LEVER B    |                 | 1    |
|                        | 4-21        | ★S1-921-140-140 | 0E         | SPRING, BUTTON LEVER A    |                 | 1    |
|                        | 4-22        | ★S1-921-140-200 | 0E         | STOPPER, PR               |                 | 1    |
|                        | 4-23        | ★S1-921-140-090 | 0E         | ACTUATOR, SWITCH          |                 | 1    |
|                        | 4-24        | ★S1-921-140-640 | 0E         | LEVER, E KICK             |                 | 1    |
|                        | 4-25        | ★S1-921-140-080 | 0E         | ACTUATOR, PUSH BUTTON     |                 | 1    |
|                        | 4-26        | ★S1-921-050-060 | 0E         | SENSOR                    |                 | 1    |
|                        | 4-27        | ★S1-921-053-030 | 1F         | TAKE UP REEL ASSY         |                 | 1    |
|                        | 4-28        | ★S1-921-140-220 | 0E         | LEVER, REC BUTTON         |                 | 1    |
|                        | 4-29        | ★S1-921-020-010 | 0E         | ARM, REC                  |                 | 1    |
|                        | 4-30        | ★S1-921-140-230 | 0E         | LEVER, PLAY BUTTON        |                 | 1    |
|                        | 4-31        | ★S1-921-010-500 | 0E         | SPRING, PLAY BUTTON LEVER |                 | 1    |
|                        | 4-32        | ★S1-921-140-240 | 0E         | LEVER, REW BUTTON         |                 | 1    |
|                        | 4-33        | ★S1-921-140-250 | 0E         | LEVER, FF BUTTON          |                 | 1    |
|                        | 4-34        | ★S1-921-140-660 | 0E         | LEVER, STOP BUTTON        |                 | 1    |
|                        | 4-35        | ★S1-921-140-610 | 0E         | LEVER, PAUSE BUTTON       |                 | 1    |
|                        | 4-36        | ★S1-821-100-700 | 0E         | GEAR, FF                  |                 | 1    |
|                        | 4-37        | ★S1-829-100-010 | 0E         | SPRING, PACK              |                 | 1    |
|                        | 4-38        | ★S1-821-100-690 | 0E         | LEVER, REC SAFETY         |                 | 1    |
|                        | 4-39        | ★S1-921-015-010 | 1D         | CHASSIS ASSY              |                 | 1    |
|                        | 4-40        | ★S1-921-260-020 | 0E         | GEAR, CAM                 |                 | 1    |
|                        | 4-41        | ★S1-921-140-160 | 0E         | E - SPRING, ACTUATOR      |                 | 1    |
|                        | 4-42        | ★S1-821-120-220 | 1C         | BELT, MAIN                |                 | 1    |
|                        | 4-43        | ★S1-921-093-050 | 1F         | FLYWHEEL ASSY             |                 | 1    |
|                        | 4-44        | ★S1-921-070-110 | 1C         | BELT, RF                  |                 | 1    |
|                        | 4-45        | ★S1-921-073-020 | 1F         | RF CLUTCH ASSY            |                 | 1    |
|                        | 4-46        | ★S1-921-140-170 | 0E         | SPRING, PS LEVER          |                 | 1    |
|                        | 4-47        | ★S1-921-140-210 | 0E         | SPRING, REC BUTTON LEVER  |                 | 1    |
|                        | 4-48        | ★S1-821-110-990 | 0E         | SPRING, BACK TENSION      |                 | 1    |
|                        | 4-49        | ★S1-921-053-040 | 1E         | SUPPLY REEL ASSY          |                 | 1    |
|                        | 4-50        | ★S1-921-310-020 | 1B         | FRAME, BUTTON S           |                 | 1    |
|                        | 4-51        | ★S1-829-310-030 | 0E         | SHAFT, BUTTON LEVER       |                 | 1    |



# EXPLODED VIEW – 5

| REF. NO. | PART NO.       | DESCRIPTION                   |
|----------|----------------|-------------------------------|
| A        | S9-179-000-000 | SCREW C TAPPING M2 – 3        |
| B        | S9-180-000-000 | SCREW C TAPPING M2 – 4        |
| C        | S9-679-000-000 | SCREW P TAPPING M2 – 5        |
| D        | S9-999-180-090 | SCREW CAMERA TAPPING M2 – 4.5 |
| E        | S9-004-000-000 | SCREW M2 – 6                  |
| F        | S9-115-000-000 | SCREW ⊕ M2 – 3 BIND           |
| G        | S9-922-000-000 | AZIMUTH SCREW M2 – 3 AZIMUTH  |
| H        | S9-182-000-000 | SCREW C TAPPING M2 – 6        |
| I        | S9-422-000-000 | PW1.2 – 3.8 – 0.3 CUT         |
| J        | S9-999-030-130 | PW1.45 – 3.8 – 0.5 CUT        |
| K        | S9-786-000-000 | PW2 – 3.5 – 0.3 CUT           |
| L        | S9-999-140-020 | SCREW S TAPPING M2 – 8        |
| M        | S9-999-200-180 | SCREW PS TAPPING 2 – 3.5      |
| N        | S9-181-000-000 | SCREW C TAPPING M2 – 5        |

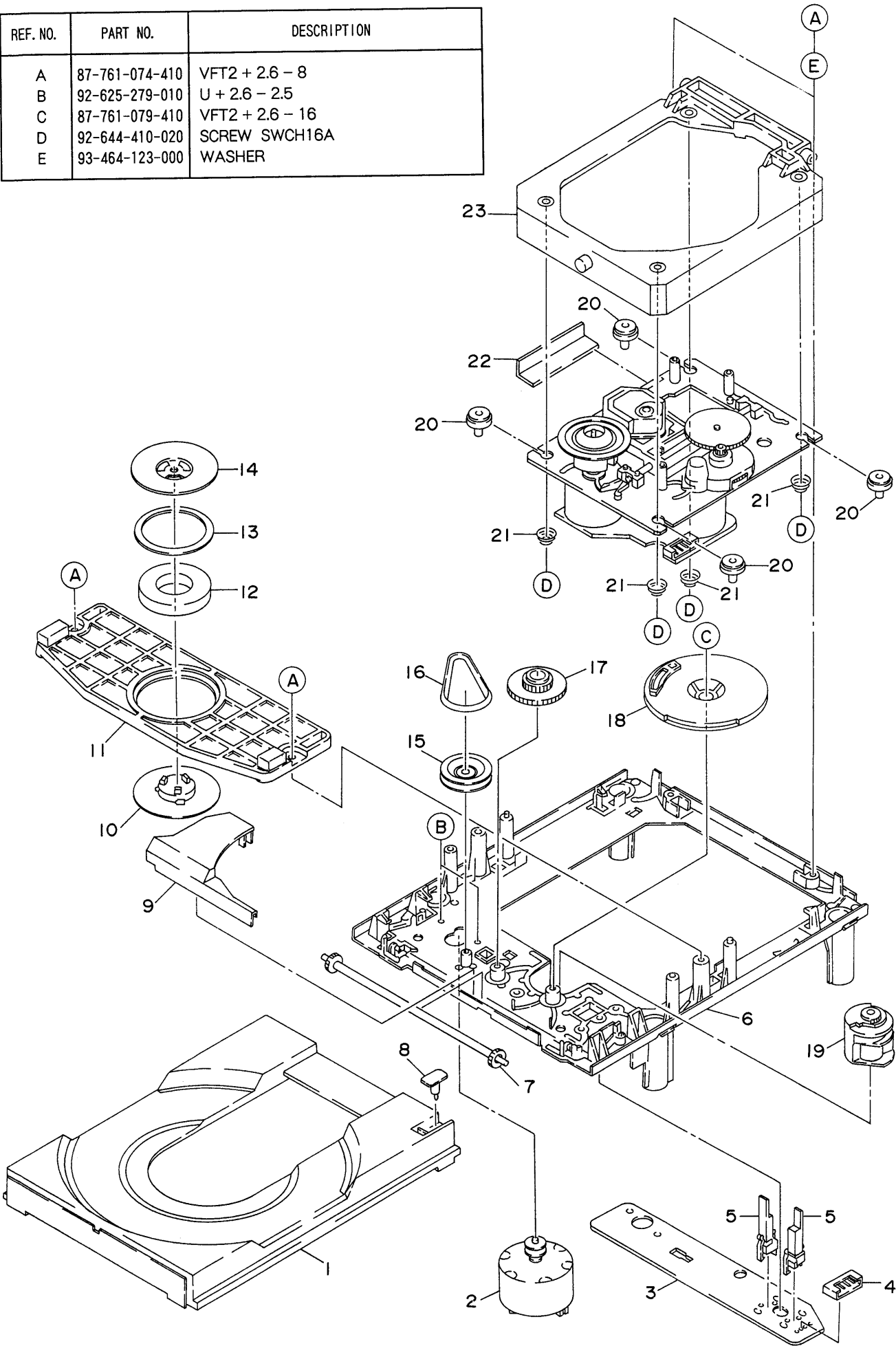


| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.        | カンリ<br>NO. | DESCRIPTION               | COMMON<br>MODEL | Q'TY |
|------------------------|-------------|-----------------|------------|---------------------------|-----------------|------|
|                        | 5-1         | ★S1-921-030-040 | OE         | BASE, HEAD                |                 | 1    |
|                        | 5-2         | ★S1-821-030-070 | OE         | SPRING, AZIMUTH           |                 | 1    |
|                        | 5-3         | ★S1-921-030-090 | OE         | P - SPRING, PANEL         |                 | 1    |
|                        | 5-4         | ★S1-921-260-050 | OE         | SPRING, GEAR PLATE        |                 | 1    |
|                        | 5-5         | ★S1-921-265-020 | OE         | GEAR PLATE ASSY           |                 | 1    |
|                        | 5-6         | ★S1-921-140-370 | OE         | COLLAR, P ARM             |                 | 2    |
|                        | 5-7         | ★S1-921-140-340 | 1A         | ARM, P                    |                 | 1    |
|                        | 5-8         | ★S1-921-030-110 | 1A         | PANEL, HEAD               |                 | 1    |
|                        | 5-9         | ★S1-921-143-010 | 1C         | BASE ASSY                 |                 | 1    |
|                        | 5-10        | ★S1-921-140-840 | OE         | M - SPRING, CONTROL       |                 | 1    |
|                        | 5-11        | ★S1-921-260-4A0 | OE         | LEVER, SENSING            |                 | 1    |
|                        | 5-12        | ★S1-921-043-100 | 1C         | PINCH ROLLER ARM ASSY     |                 | 1    |
|                        | 5-13        | ★S1-921-130-020 | OE         | LEVER, EJECT SLIDE        |                 | 1    |
|                        | 5-14        | ★S1-921-140-130 | OE         | P - SPRING, CONTROL       |                 | 1    |
|                        | 5-15        | ★S1-921-140-550 | OE         | LEVER, PAUSE E            |                 | 1    |
|                        | 5-16        | ★S1-921-140-120 | OE         | SPRING, PAUSE LEVER       |                 | 1    |
|                        | 5-17        | ★S1-921-140-110 | OE         | STOPPER, PAUSE            |                 | 1    |
|                        | 5-18        | ★S1-921-140-150 | OE         | SPRING, BUTTON LEVER B    |                 | 1    |
|                        | 5-19        | ★S1-821-011-590 | OE         | LEVER, E KICK             |                 | 1    |
|                        | 5-20        | ★S1-921-140-140 | OE         | SPRING, BUTTON LEVER A    |                 | 1    |
|                        | 5-21        | ★S1-921-140-200 | OE         | STOPPER, PR               |                 | 1    |
|                        | 5-22        | ★S1-921-140-400 | OE         | ACTUATOR, SWITCH          |                 | 1    |
|                        | 5-23        | ★S1-921-140-080 | OE         | ACTUATOR, PUSH BUTTON     |                 | 1    |
|                        | 5-24        | ★S1-921-140-230 | OE         | LEVER, PLAY BUTTON        |                 | 1    |
|                        | 5-25        | ★S1-821-010-500 | OE         | SPRING, PLAY BUTTON LEVER |                 | 1    |
|                        | 5-26        | ★S1-921-140-240 | OE         | LEVER, REW BUTTON         |                 | 1    |
|                        | 5-27        | ★S1-921-140-250 | OE         | LEVER, FF BUTTON          |                 | 1    |
|                        | 5-28        | ★S1-921-140-260 | OE         | LEVER, STOP BUTTON        |                 | 1    |
|                        | 5-29        | ★S1-921-140-610 | OE         | LEVER, PAUSE BUTTON       |                 | 1    |
|                        | 5-30        | ★S1-821-100-700 | OE         | GEAR, FF                  |                 | 1    |
|                        | 5-31        | ★S1-921-050-060 | OE         | SENSOR                    |                 | 1    |
|                        | 5-32        | ★S1-921-053-030 | 1F         | TAKE UP REEL ASSY         |                 | 1    |
|                        | 5-33        | ★S1-829-100-010 | OE         | SPRING, PACK              |                 | 1    |
|                        | 5-34        | ★S1-921-053-040 | 1E         | SUPPLY REEL ASSY          |                 | 1    |
|                        | 5-35        | ★S1-821-100-990 | OE         | SPRING, BACK TENSION      |                 | 1    |
|                        | 5-36        | ★S1-921-015-010 | 1D         | CHASSIS ASSY              |                 | 1    |
|                        | 5-37        | ★S1-921-140-170 | OE         | P - SPRING, LEVER S       |                 | 1    |
|                        | 5-38        | ★S1-921-073-020 | 1F         | RF CLUTCH ASSY            |                 | 1    |
|                        | 5-39        | ★S1-921-070-110 | 1C         | BELT, RF                  |                 | 1    |
|                        | 5-40        | ★S1-921-260-020 | OE         | GEAR, CAM                 |                 | 1    |
|                        | 5-41        | ★S1-921-140-160 | OE         | E - SPRING, ACTUATOR      |                 | 1    |
|                        | 5-42        | ★S1-921-093-110 | 1F         | FLYWHEEL ASSY             |                 | 1    |
|                        | 5-43        | ★S1-821-120-220 | 1C         | BELT, MAIN                |                 | 1    |
|                        | 5-44        | ★S1-821-310-070 | OE         | LEVER, OPERATION          |                 | 6    |
|                        | 5-45        | ★S1-921-120-130 | OE         | PULLEY, MOTOR             |                 | 1    |
|                        | 5-46        | ★S1-921-120-120 | —          | MAT, FELT                 |                 | 2    |
|                        | 5-47        | ★S1-821-120-680 | 1F         | LEVER, P KICK A           |                 | 1    |
|                        | 5-48        | ★S1-821-120-230 | OE         | SCREW, PK COLLAR A        |                 | 1    |
|                        | 5-49        | ★S1-821-120-250 | 1B         | P - SPRING, KICK LEVER    |                 | 1    |
|                        | 5-50        | ★S1-921-120-110 | 1B         | BRACKET, MOTOR            |                 | 1    |

| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.        | カンリ<br>NO. | DESCRIPTION         | COMMON<br>MODEL | Q'TY |
|------------------------|-------------|-----------------|------------|---------------------|-----------------|------|
|                        | 5-51        | ★S1-921-120-090 | 1B         | LEVER, P KICK B     |                 | 1    |
|                        | 5-52        | ★S1-821-120-650 | 0E         | COLLAR, B           |                 | 1    |
|                        | 5-53        | ★S1-820-130-060 | 0E         | RUBBER, MOTOR       |                 | 3    |
|                        | 5-54        | ★S1-821-120-020 | 0E         | SCREW, MOTOR COLLAR |                 | 3    |
|                        | 5-55        | ★S1-829-310-030 | 0E         | SHAFT, BUTTON LEVER |                 | 1    |
|                        | 5-56        | ★S1-821-310-060 | 1B         | FRAME, BUTTON S     |                 | 1    |

EXPLODED VIEW – 6

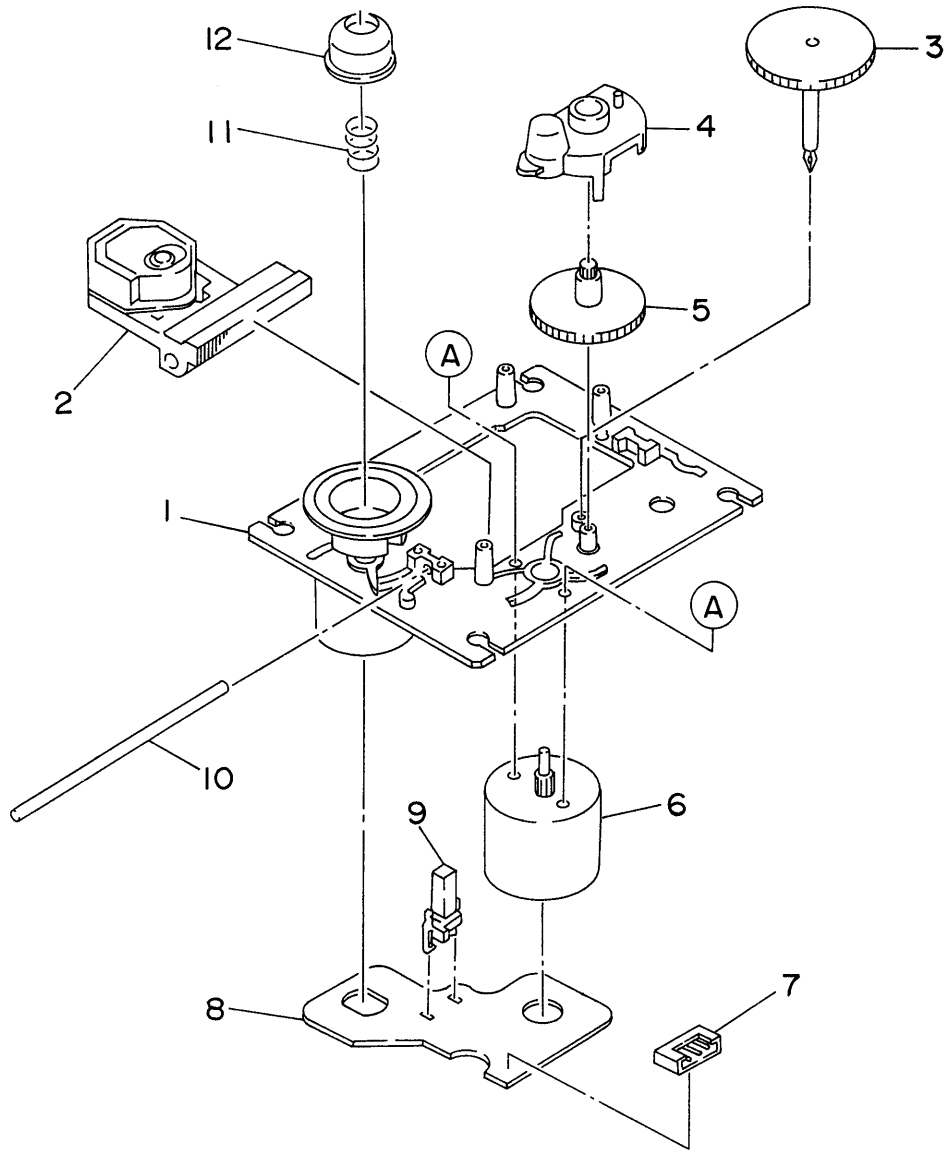
| REF. NO. | PART NO.       | DESCRIPTION     |
|----------|----------------|-----------------|
| A        | 87-761-074-410 | VFT2 + 2.6 – 8  |
| B        | 92-625-279-010 | U + 2.6 – 2.5   |
| C        | 87-761-079-410 | VFT2 + 2.6 – 16 |
| D        | 92-644-410-020 | SCREW SWCH16A   |
| E        | 93-464-123-000 | WASHER          |



| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.        | カンリ<br>NO. | DESCRIPTION                   | COMMON<br>MODEL | Q'TY |
|------------------------|-------------|-----------------|------------|-------------------------------|-----------------|------|
|                        | 6-1         | ★92-625-288-040 | 1F         | TRAY                          |                 | 1    |
|                        | 6-2         | ★9X-262-511-710 | 2M         | LOADING MOTOR ASSY            |                 | 1    |
|                        | 6-3         | ---             |            | PWB, LOADING                  |                 | 1    |
|                        | 6-4         | ★91-564-721-110 | 1B         | CONNECTOR 5P                  |                 | 1    |
|                        | 6-5         | 91-572-086-110  | 1B         | SWITCH, LEAF                  |                 | 2    |
|                        | 6-6         | ---             |            | CHASSIS, MAIN                 |                 | 1    |
|                        | 6-7         | ★92-625-275-030 | 1C         | GEAR, TRAY                    |                 | 1    |
|                        | 6-8         | ---             |            | SW PIN                        |                 | 1    |
|                        | 6-9         | ★92-625-282-020 | 1B         | COVER, GEAR                   |                 | 1    |
|                        | 6-10        | ★92-625-286-030 | 1B         | PULLEY, CHUCKING              |                 | 1    |
|                        | 6-11        | ★92-625-284-040 | —          | PLATE, CHUCKING               |                 | 1    |
|                        | 6-12        | ★91-452-493-210 | 1D         | MAGNET                        |                 | 1    |
|                        | 6-13        | ★92-625-541-010 | —          | DAMPER                        |                 | 1    |
|                        | 6-14        | ★92-625-277-010 | 1B         | YOKE, CHUCK                   |                 | 1    |
|                        | 6-15        | ★92-625-276-010 | —          | PULLEY, LOADING               |                 | 1    |
|                        | 6-16        | ★93-653-387-000 | 1D         | BELT, LM                      |                 | 1    |
|                        | 6-17        | ★92-625-274-020 | 1B         | GEAR, MEDDLE                  |                 | 1    |
|                        | 6-18        | ★92-625-285-030 | 1C         | GEAR, DRIVE                   |                 | 1    |
|                        | 6-19        | ★92-625-283-020 | 1C         | CAM, CONTROL                  |                 | 1    |
|                        | 6-20        | ★92-625-278-010 | 1F         | INSULATOR                     |                 | 4    |
|                        | 6-21        | ★92-625-280-010 | 1B         | SPRING                        |                 | 4    |
|                        | 6-22        | ---             |            | PLATE, PUSH                   |                 | 1    |
|                        | 6-23        | ---             |            | SUB CHASSIS ASSY W/INSU SHAFT |                 | 1    |

EXPLODED VIEW - 7

| REF. NO. | PART NO.       | DESCRIPTION |
|----------|----------------|-------------|
| A        | 87-261-032-210 | V + 2 - 3   |



| PART NO.<br>CHANGED TO | REF.<br>NO. | PART NO.        | カンリ<br>NO. | DESCRIPTION              | COMMON<br>MODEL | Q'TY |
|------------------------|-------------|-----------------|------------|--------------------------|-----------------|------|
|                        | 7-1         | ★9X-262-513-310 | 2C         | T.T CHASSIS ASSY W/MOTOR |                 | 1    |
|                        | 7-2         | 98-848-127-11Z  | 2G         | PICK UP KSS - 210A       |                 | 1    |
|                        | 7-3         | ★92-625-188-020 | 1B         | GEAR, A                  |                 | 1    |
|                        | 7-4         | ★92-625-544-010 | —          | COVER                    |                 | 1    |
|                        | 7-5         | ---             |            | GEAR, B                  |                 | 1    |
|                        | 7-6         | ★9X-262-513-210 | 2M         | SLED MOTOR ASSY          |                 | 1    |
|                        | 7-7         | ★91-564-722-110 | 1B         | CONNECTOR 6P             |                 | 1    |
|                        | 7-8         | ---             |            | PWB, MOTOR               |                 | 1    |
|                        | 7-9         | 91-572-085-110  | 1B         | SWITCH, LEAF LIMIT       |                 | 1    |
|                        | 7-10        | ★94-917-565-010 | 1C         | SHAFT, SLED              |                 | 1    |
|                        | 7-11        | ★92-625-191-010 | 1B         | SPRING, COMPRESSION      |                 | 1    |
|                        | 7-12        | ★92-625-187-010 | 1B         | RING, CENTER             |                 | 1    |



| サービス技術ニュース |      |
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| 番号         | 連絡内容 |
| G - -      |      |
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**アイワ株式会社**  
**AIWA CO.,LTD.**

912162  
**Tokyo Japan**