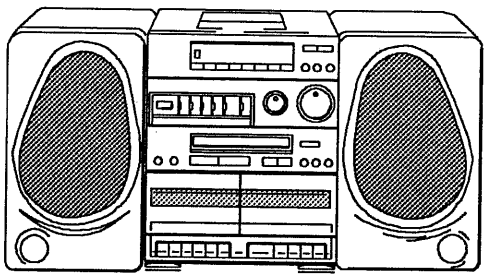
aiwa

# CA-B500
# CA-DW500

SERVICE MANUAL



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

S/M Code No. 0195 DATE OF ISSUE 1/1993－T

# 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 +2 -3 dB

＜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

### TUNER SECTION

<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

### AMPLIFIER SECTION

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

### CD PLAYER SECTION

Disc Compact disc
Scanning Method Non contact optical scanner (semiconductor laser application)
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 responce
40-20,000 Hz $^{+2}_{-6}$ dB

### CASSETTE DECK SECTION

Track format 4 tracks, 2 channels
Frequency response
Normal tape: 50-12,000 Hz
Signal to noise ratio
50 dB (Normal tape)
Wow and flutter 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
AC bias
Erasure system AC erase
Motor DC motor x 1
Heads Record/playback head x 1 (deck 1)
Erasur head x 1 (deck 1)
Playback head x 1 (deck 2)

### COMMON SECTION

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

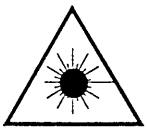
Cabinet type 2-way Bass reflex type
Speaker 120 mm (4 3/4 in.) cone type woofer
27 mm (1 1/8 in.) ceramic type tweeter
Impedance 4 ohms
Allowable max. input
12 W
Dimensions (W x H x D)
185 x 305 x 220 mm x 2
(7 3/8 x 12 1/8 x 8 3/4 in.)
Weight 1.5 kg (3.3 lbs) x 2

● 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 käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

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

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

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

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

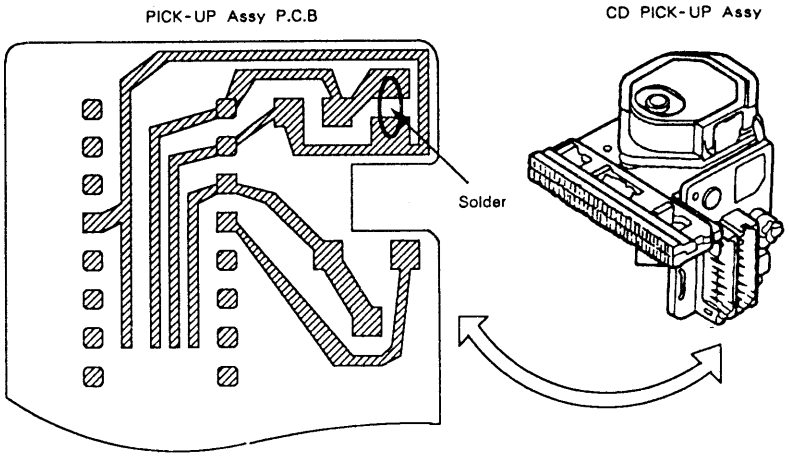
光学系ブロック内のレーザーダイオードは、衣服や人体に帯電した静電荷等で電位差を生じることにより、静電破壊することがあります。人体アース、作業台のアースをとり、衣服が触れぬよう注意して下さい。

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. | カンリNO. | 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 |
| | S1-021-855-0D0 | 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) |
| 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. | ｶﾝﾘ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 |
| 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 OIRNI |
| EMI2 | ★S5-535-800-020 | 0E | FILTER OIRNI |
| 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) |

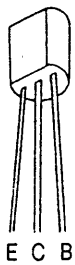
| REF. NO. | PART NO. | カンリNO. | DESCRIPTION |
|---|---|---|---|
| S104 | S5-165-800-010 | 0E | TACT SWITCH(4) |
| S105 | S5-165-800-010 | 0E | TACT SWITCH(5) |
| S106 | S5-165-800-010 | 0E | TACT SWITCH(6) |
| S107 | S5-165-800-010 | 0E | TACT SWITCH(7) |
| S108 | S5-165-800-010 | 0E | TACT SWITCH(8) |
| S109 | S5-165-550-071 | 0E | TACT SWITCH(BAND) |
| S110 | S5-165-550-071 | 0E | TACT SWITCH(MEMORY/SET) |
| S111 | S5-165-550-071 | 0E | TACT SWITCH(STOP) |
| S112 | S5-165-550-071 | 0E | TACT SWITCH(>UP) |
| S113 | S5-165-550-071 | 0E | TACT SWITCH(REPEAT) |
| S114 | S5-165-550-071 | 0E | TACT SWITCH(PLAY/PAUSE) |
| S115 | S5-165-550-071 | 0E | TACT SWITCH(>DOWN) |
| S116 | S5-165-550-071 | 0E | TACT SWITCH(CD MODE) |
| S117 | S5-165-550-071 | 0E | TACT SWITCH(FM MODE/OSC) |
| S118 | S5-165-550-071 | 0E | TACT SWITCH(MEMORY) |
| S119 | S5-165-550-071 | 0E | TACT SWITCH(▶▶/▶▶▶) |
| S120 | S5-165-550-071 | 0E | 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 | 0E | SPEAKER JACK(SPEAKERS R) |
| J602 | ★S5-065-800-010 | 0E | SPEAKER JACK(SPEAKERS L) |

| REF. NO. | PART NO. | カンリNO. | DESCRIPTION |
|---|---|---|---|
| | ===POWER CIRCUIT BOARD SECTION=== | | |
| | ★S5-320-558-000 | 0E | 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) |

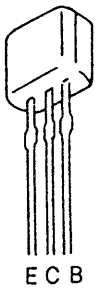
## ■ ACCESSORIES／PACKAGE LIST

| PART NO. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON MODEL | Q,TY |
|---|---|---|---|---|---|---|
| | 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 | | NSTRUCTION, 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

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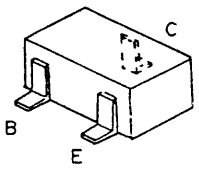
2SC1740
DTA144TS
DTC124XS

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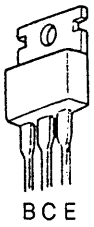
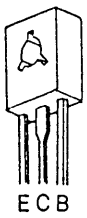
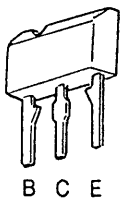
DTA144EK
DTC124XK
DTC143EK



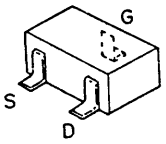

2SB1064



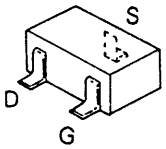

2SD882




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 | TPI | 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 | FAPO | 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 |
|---|---|---|---|
| 41 | TS1N | I | Tracking servo amplifier 1 (TS1 AMP) negative-phase input terminal. |
| 42 | TS1P | I | Tracking servo amplifier 1 (TS1 AMP) positive-phase input terminal. |
| 43 | TSO | O | Tracking output amplifier (TS AMP) output terminal. |
| 44 | 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 | $\overline{\text{TEST4}}$ | I | Test terminal. Normally "H" or open. (Not used.) |
| 2 | $\overline{\text{TEST5}}$ | I | Test terminal. Normally "H" or open. (Not used.) |
| 3 | CK8M | O | 8M clock output terminal. (Not used.) |
| 4 | COFS | O | Correction sytem frame frequency signal output terminal. 7.35kHz (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>〜<br>17 | BUS0<br>〜<br>BUS3 | I/O | Command and data send/receive I/O terminal. |
| 18 | $\overline{\text{CCE}}$ | I | Chip enable signal input terminal for command and data send/recieve.<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 | $\overline{\text{RST}}$ | I | Reset input terminal. Internal system reset when "L". |
| 22 | CCNT | I | Subcode Q data control bit update inhibition signal input terminal.<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 siganal in EFM signal is not detected within 17 ms in runaway detection. (Not used.) |
| 26 | $\overline{\text{TEST1}}$ | I | Test terminal. Normally "H" or open. (Not used.) |
| 27 | DFCT | O | Defect detection signal output terminal. VREF when a defect signal is detected: Normally HiZ. (Not used.) |
| 28 | TEL2 | O | Tracking gain adjustment analog switch output terminal. VREF or HiZ. |
| 29 | TEL1 | | |
| 30 | TGUL | O | Analog switch output terminal for switching the low range phase compensator of the tracking servo loop.<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 ㉛ 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 ㉟ is not used.) |
| 35 | $\overline{\text{FMON}}$ | | |

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

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

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

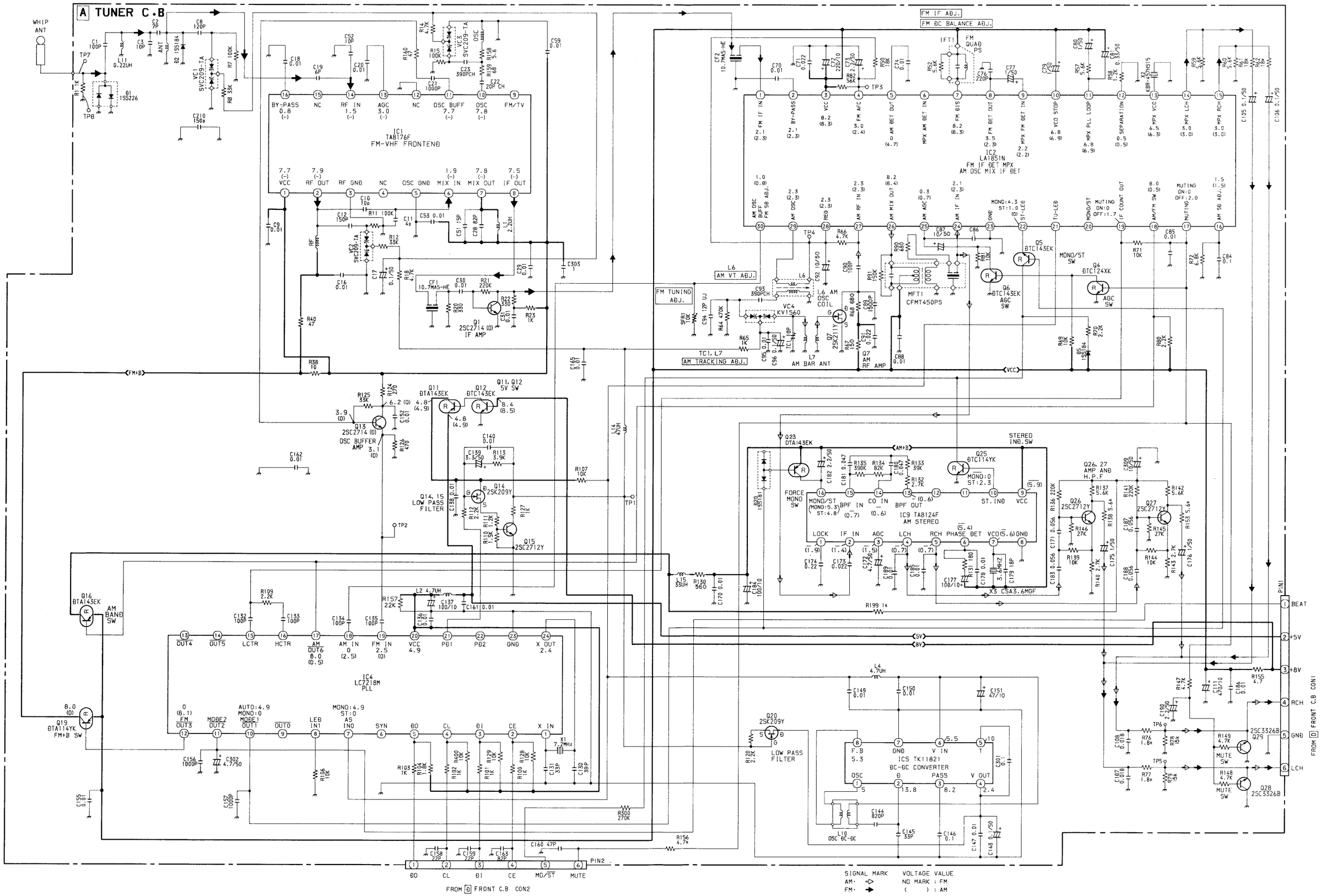
## A TUNER C.B

FROM D FRONT C.B
CON2 3 5 6

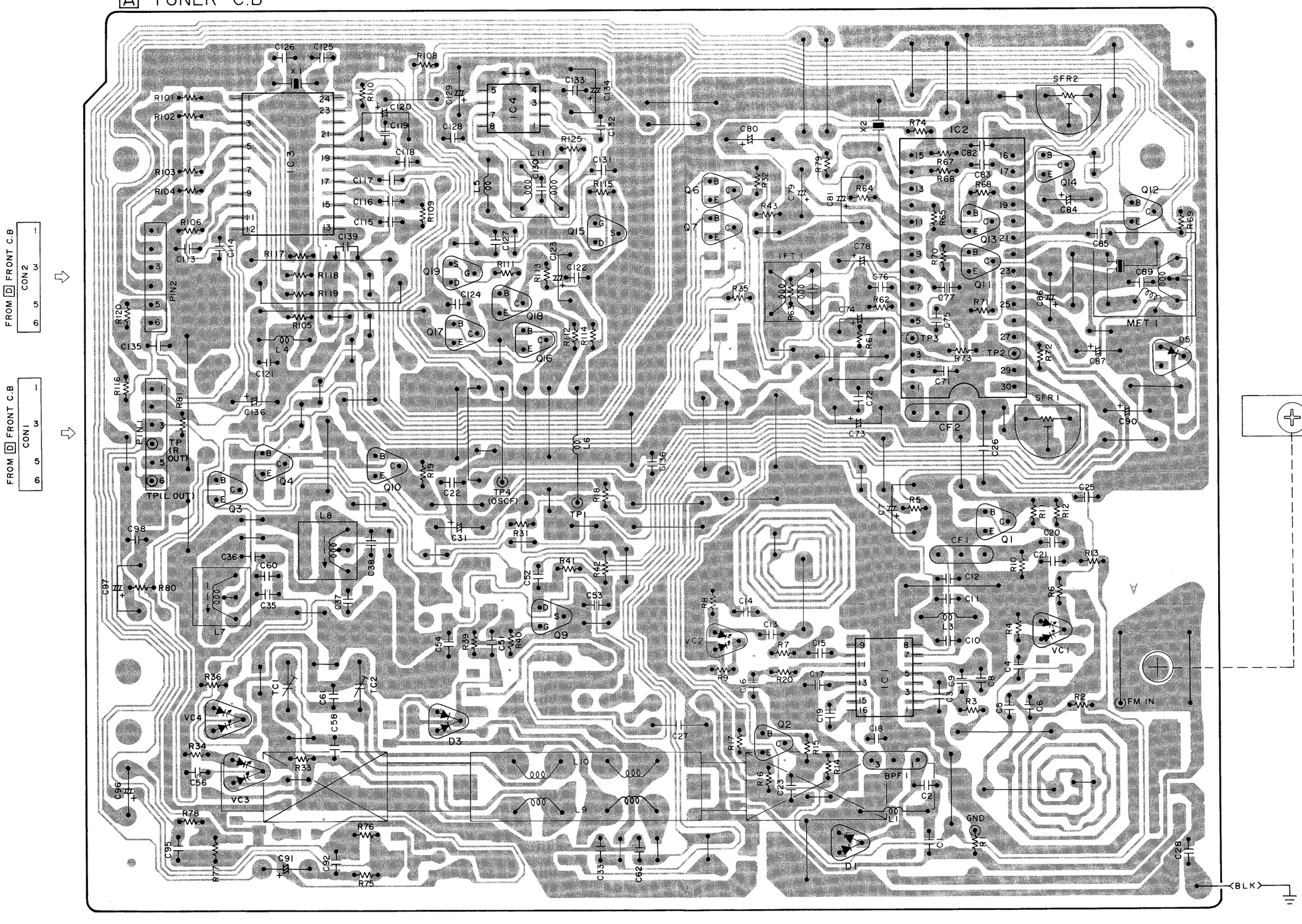
FROM B FRONT C.B
CON1 3 5 6

WHIP ANT.

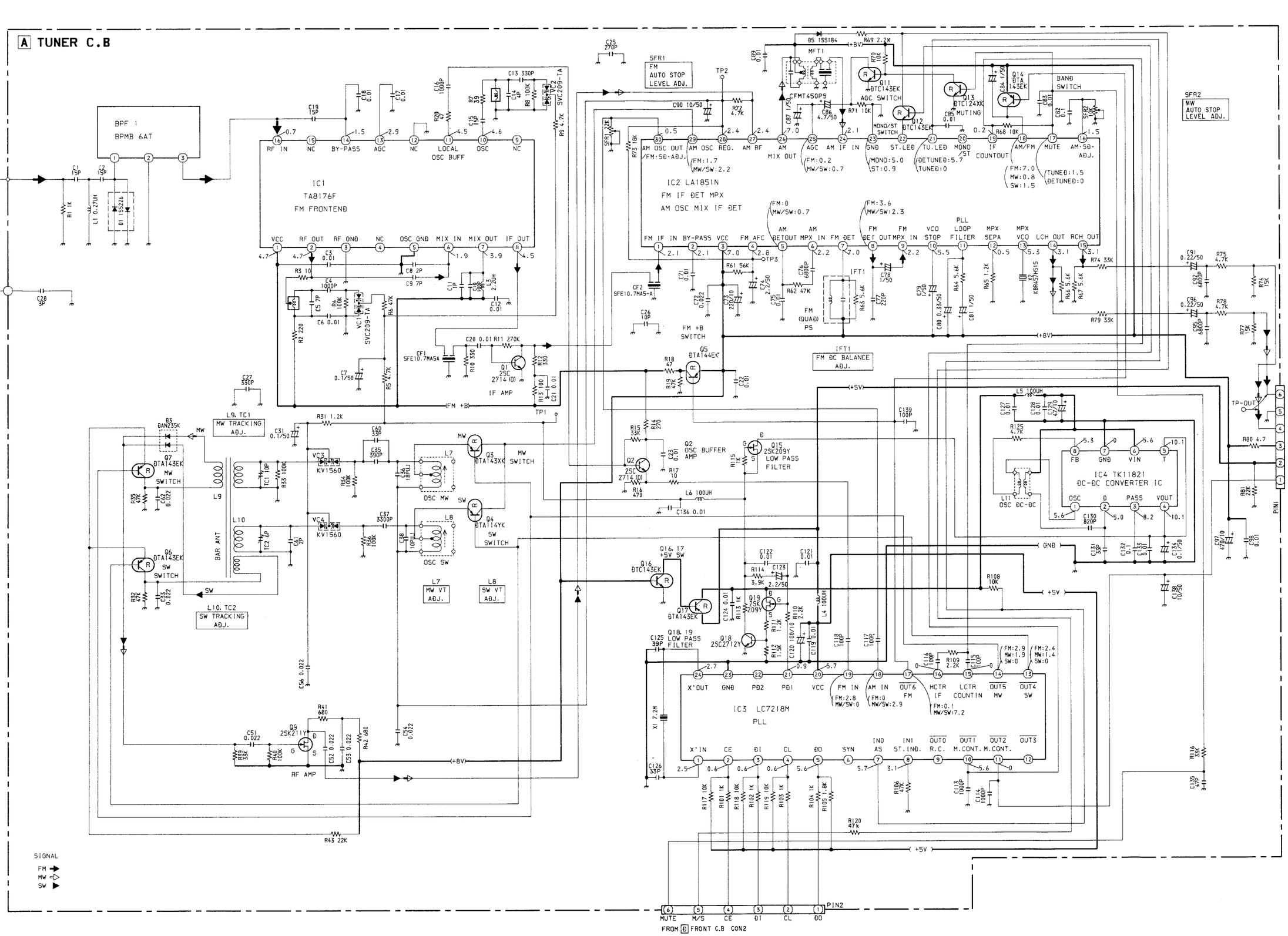
# SCHEMATIC DIAGRAM – 1 (CA – B500 : TUNER)



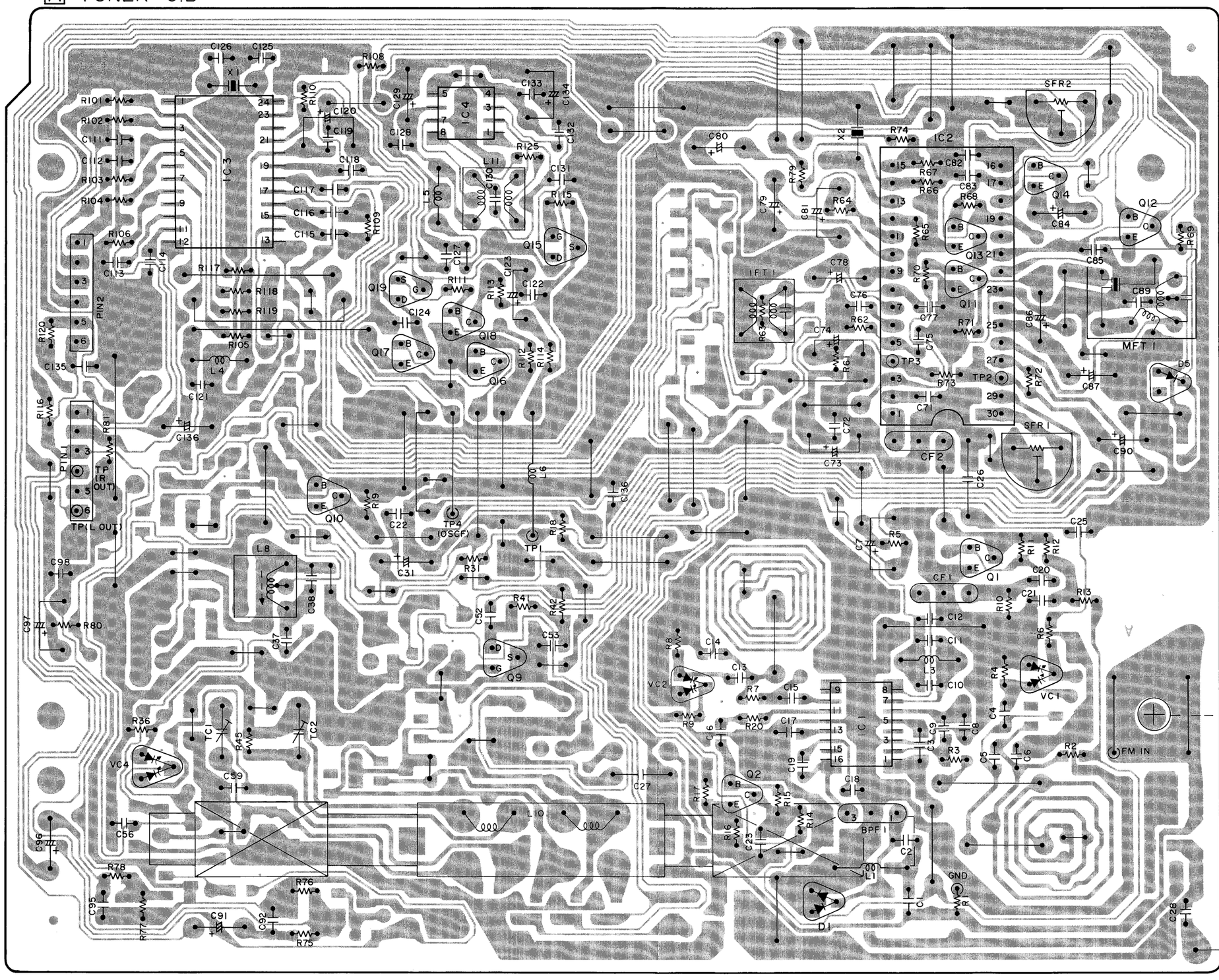
## A TUNER C.B


FROM D FRONT C.B CON2
FROM D FRONT C.B CON1
PIN2
PIN1
TP (R OUT)
TP(L OUT)
TP1
TP2
TP3
TP4 (OSCF)
FM IN
GND
(BLK)
WHIP ANT.
IC1
IC2
IC3
IC4
Q1
Q2
Q3
Q4
Q6
Q7
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
D1
D3
D5
VC1
VC2
VC3
VC4
TC1
TC2
IFT1
MFT1
BPF1
SFR1
SFR2
CF1
CF2
X1
X2

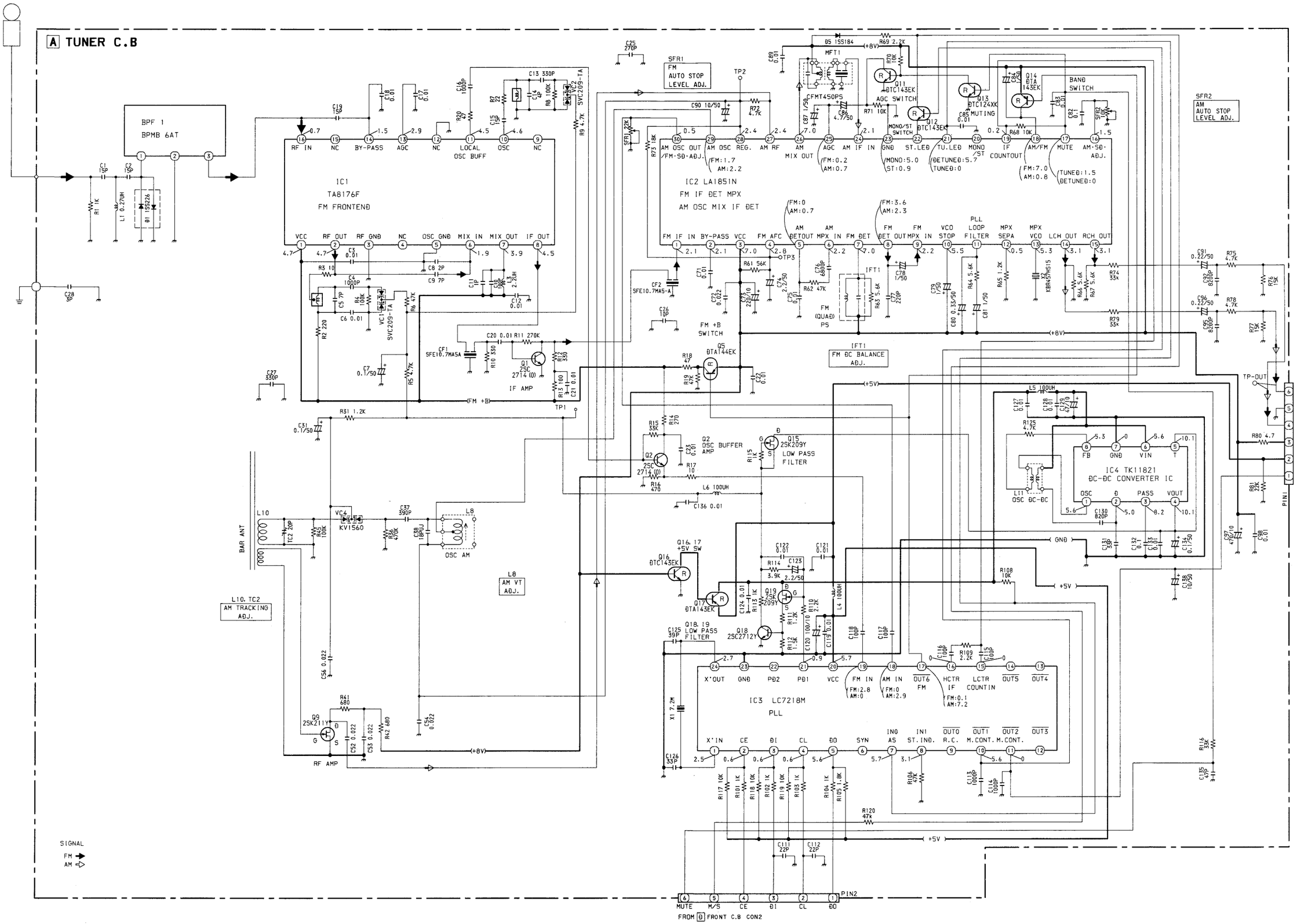
# SCHEMATIC DIAGRAM – 2 (CA – DW500 H : TUNER)



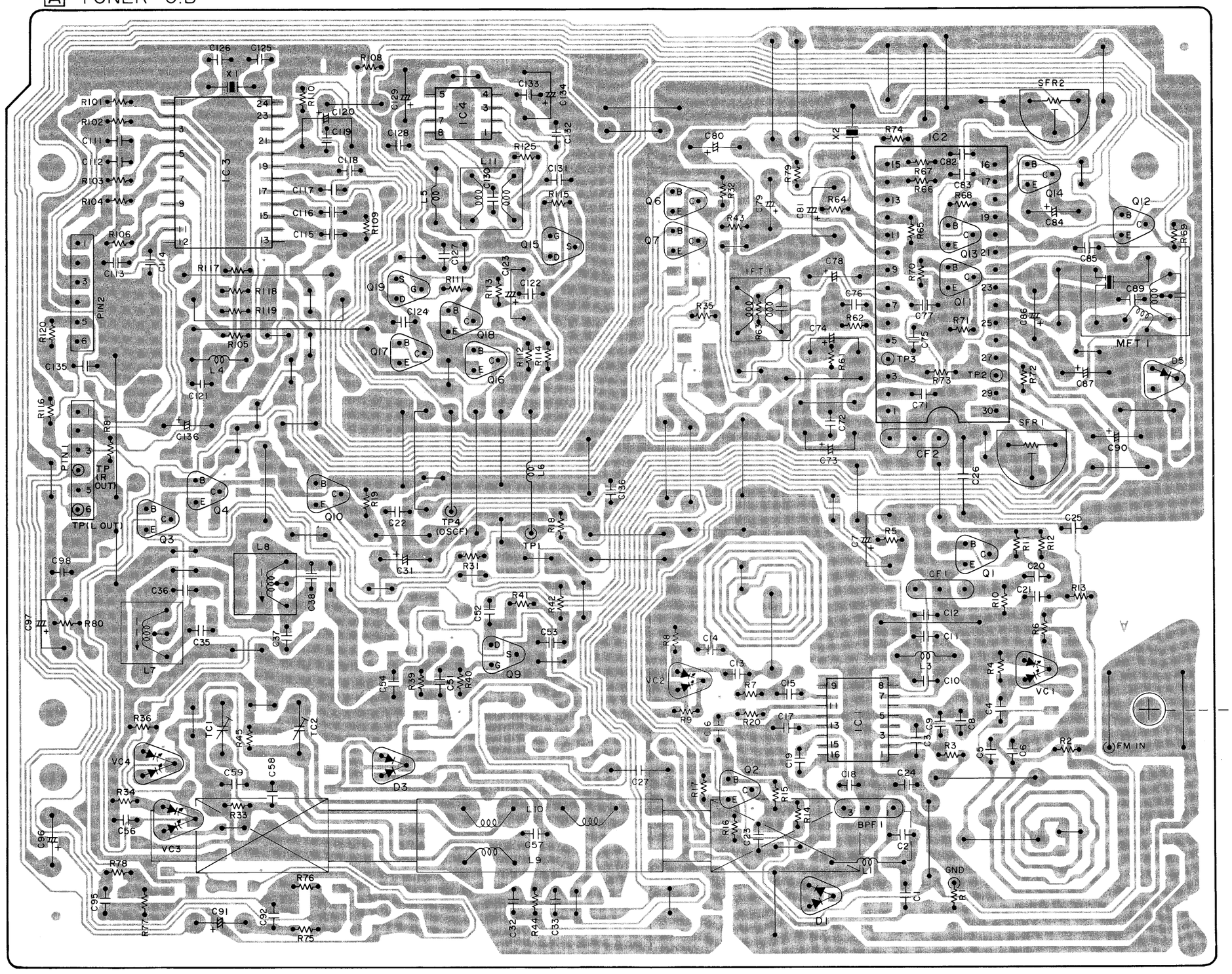
## A TUNER C.B


FROM D FRONT C.B
CON2
FROM D FRONT C.B
CON1
TP (R OUT)
TP(L OUT)
PIN1
PIN2
IC3
IC4
IC1
IC2
X1
X2
L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
L11
IFT1
MFT1
CF1
CF2
SFR1
SFR2
TP1
TP2
TP3
TP4 (OSCF)
TC1
TC2
VC1
VC2
VC4
D1
D5
Q1
Q2
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19
BPF1
GND
FM IN
WHIP ANT,
BLK

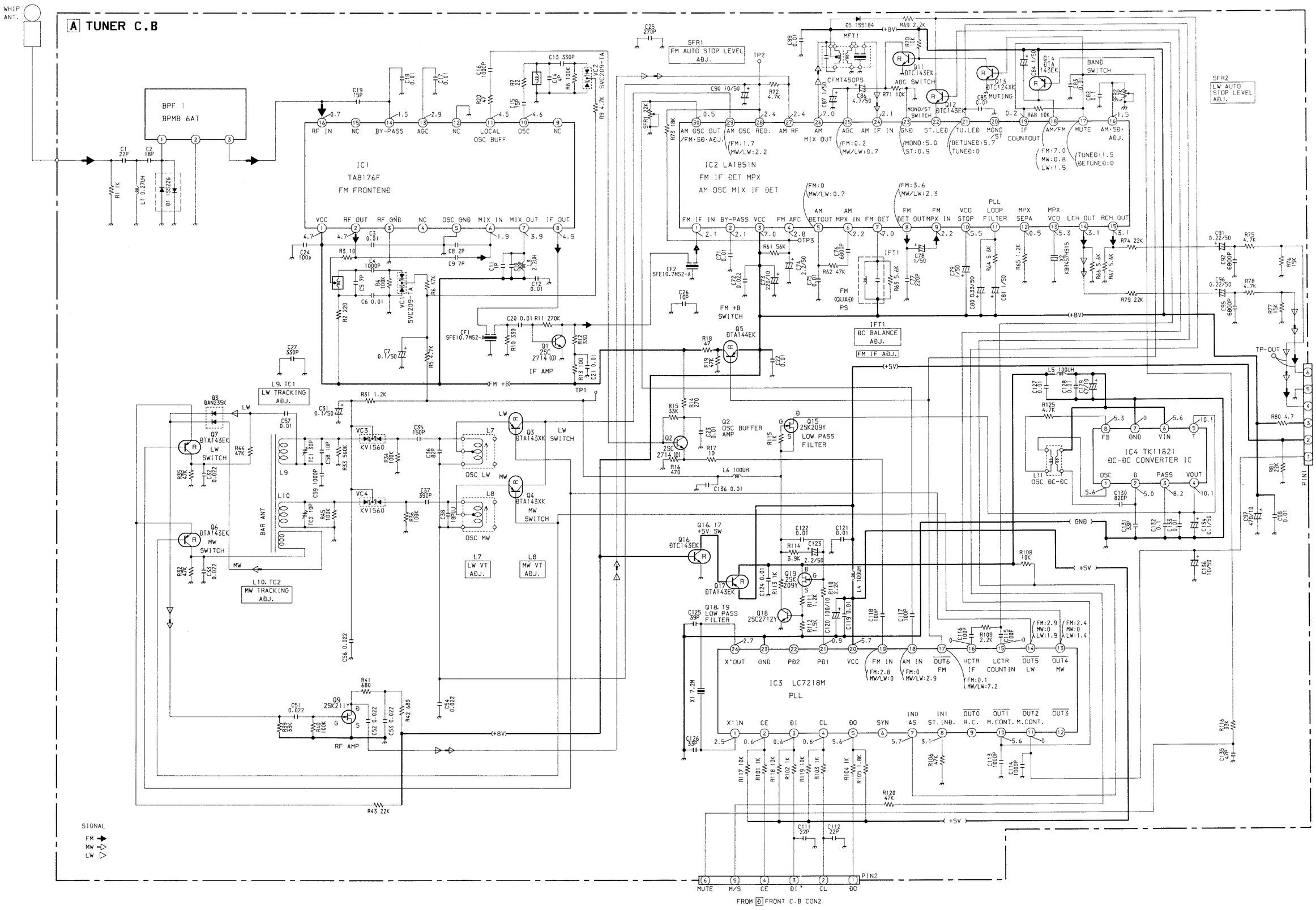
# SCHEMATIC DIAGRAM – 3 (CA – DW500 LH, U : TUNER)

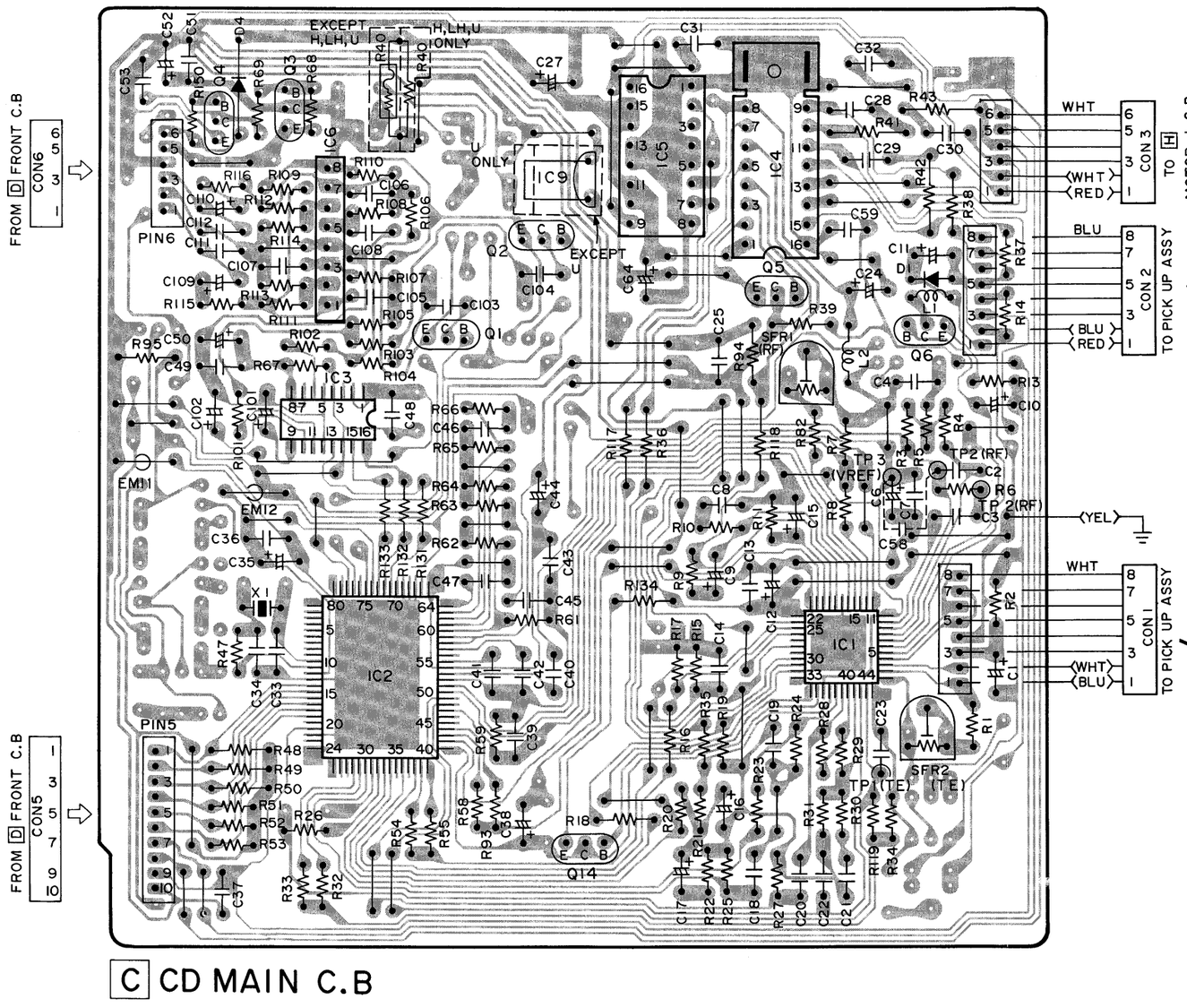


## A TUNER C.B

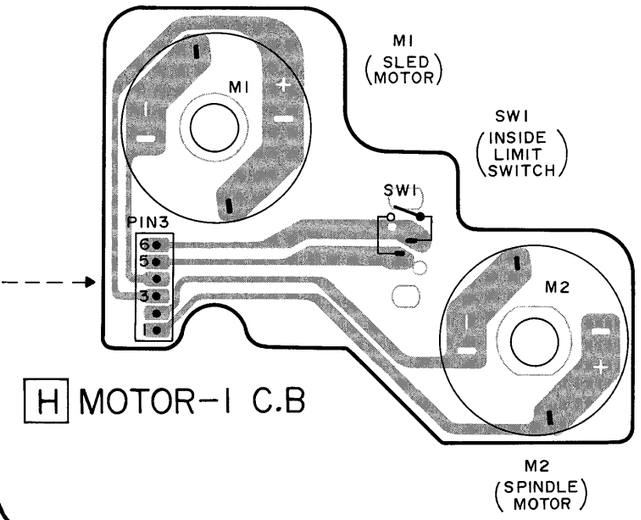

FROM D FRONT C.B
CON2
FROM D FRONT C.B
CON1
PIN2
PIN1
TP (R OUT)
TP(L OUT)
IC3
IC4
IC2
IC1
IFT1
MFT1
SFR1
SFR2
CF1
CF2
BPF1
X1
X2
L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
L11
TC1
TC2
VC1
VC2
VC3
VC4
D1
D3
D5
TP1
TP2
TP3
TP4 (OSCF)
FM IN
GND
WHIP ANT.
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
Q17
Q18
Q19

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

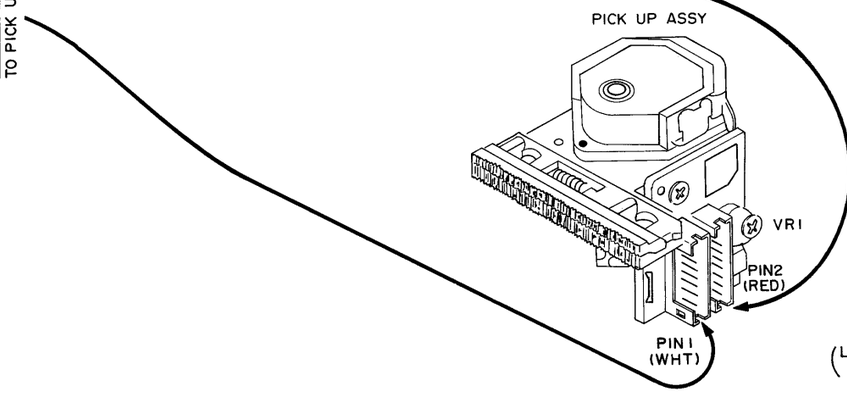


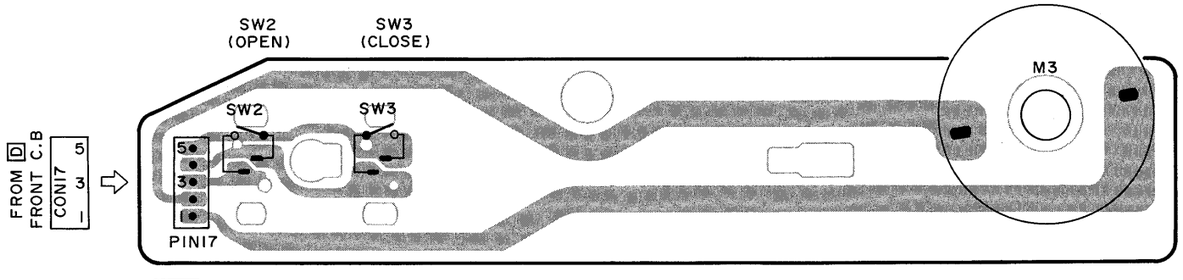



C CD MAIN C.B

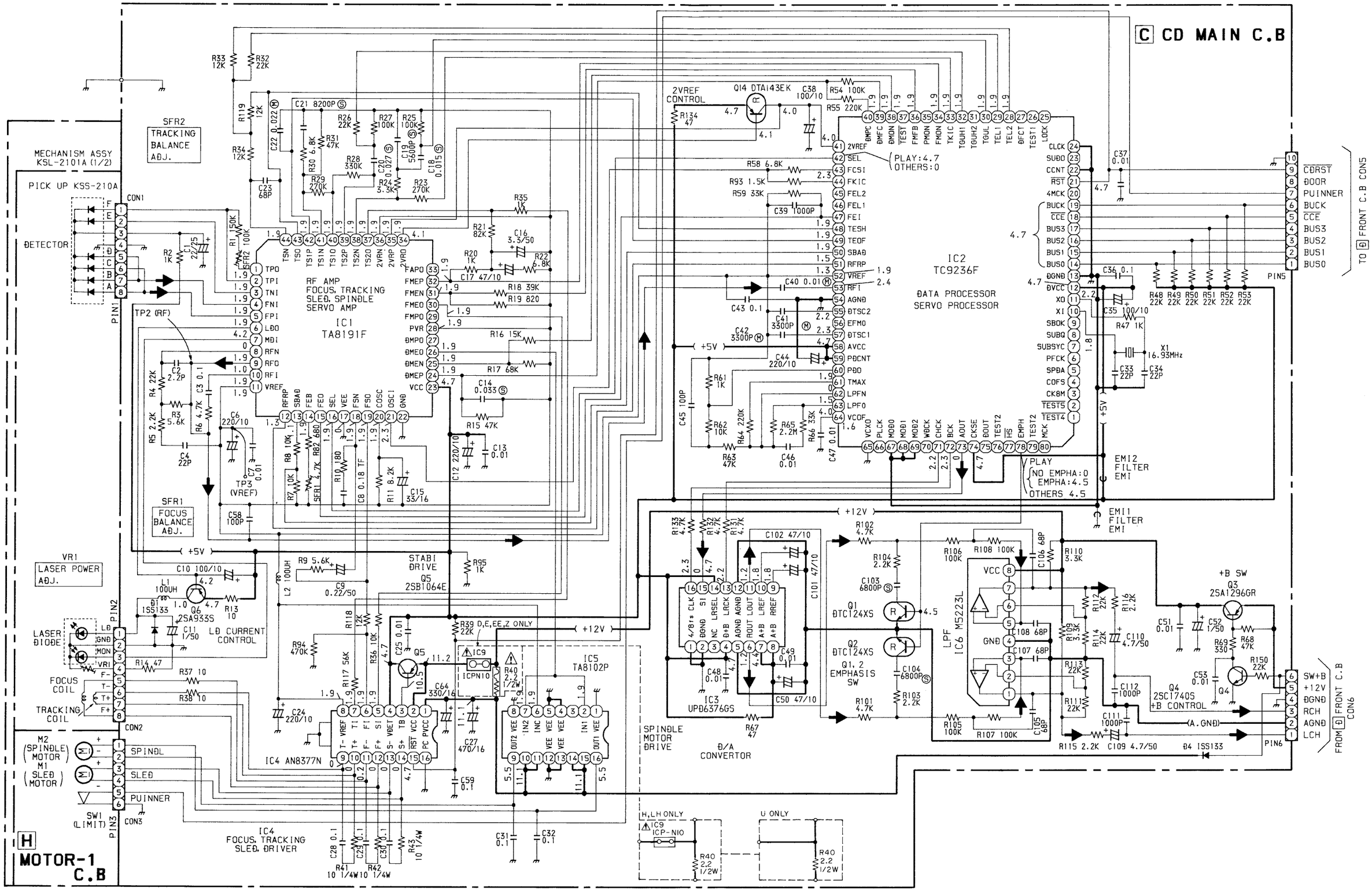



H MOTOR-1 C.B




I MOTOR-2 C.B


C CD MAIN C.B
MECHANISM ASSY KSL-2101A (1/2)
PICK UP KSS-210A
DETECTOR
CON1
SFR2 TRACKING BALANCE ADJ.
RF AMP FOCUS, TRACKING SLED, SPINDLE SERVO AMP
IC1 TA8191F
TP2 (RF)
TP3 (VREF)
SFR1 FOCUS BALANCE ADJ.
VR1 LASER POWER ADJ.
LASER DIODE
FOCUS COIL
TRACKING COIL
CON2
M2 (SPINDLE MOTOR)
M1 (SLED MOTOR)
SW1 (LIMIT)
CON3
MOTOR-1 C.B
IC4 FOCUS, TRACKING SLED, DRIVER
IC4 AN8377N
STABI DRIVE
Q5 2SB1064E
LD CURRENT CONTROL
IC5 TA8102P
SPINDLE MOTOR DRIVE
IC2 TC9236F
DATA PROCESSOR SERVO PROCESSOR
2VREF CONTROL
Q14 DTA143EK
PLAY:4.7 OTHERS:0
IC3 UPD6376GS
D/A CONVERTOR
LPF IC6 M5223L
Q1 DTC124XS
Q2 DTC124XS
Q1, 2 EMPHASIS SW
PLAY NO EMPHA:0 EMPHA:4.5 OTHERS 4.5
EMI2 FILTER EMI
EMI1 FILTER EMI
+B SW Q3 2SA1296GR
Q4 2SC1740S +B CONTROL
H,LH ONLY IC9 ICP-N10 R40 2.2 1/2W
U ONLY R40 2.2 1/2W
TO D FRONT C.B CON5
FROM D FRONT C.B CON6
PIN1
PIN2
PIN3
PIN5
PIN6

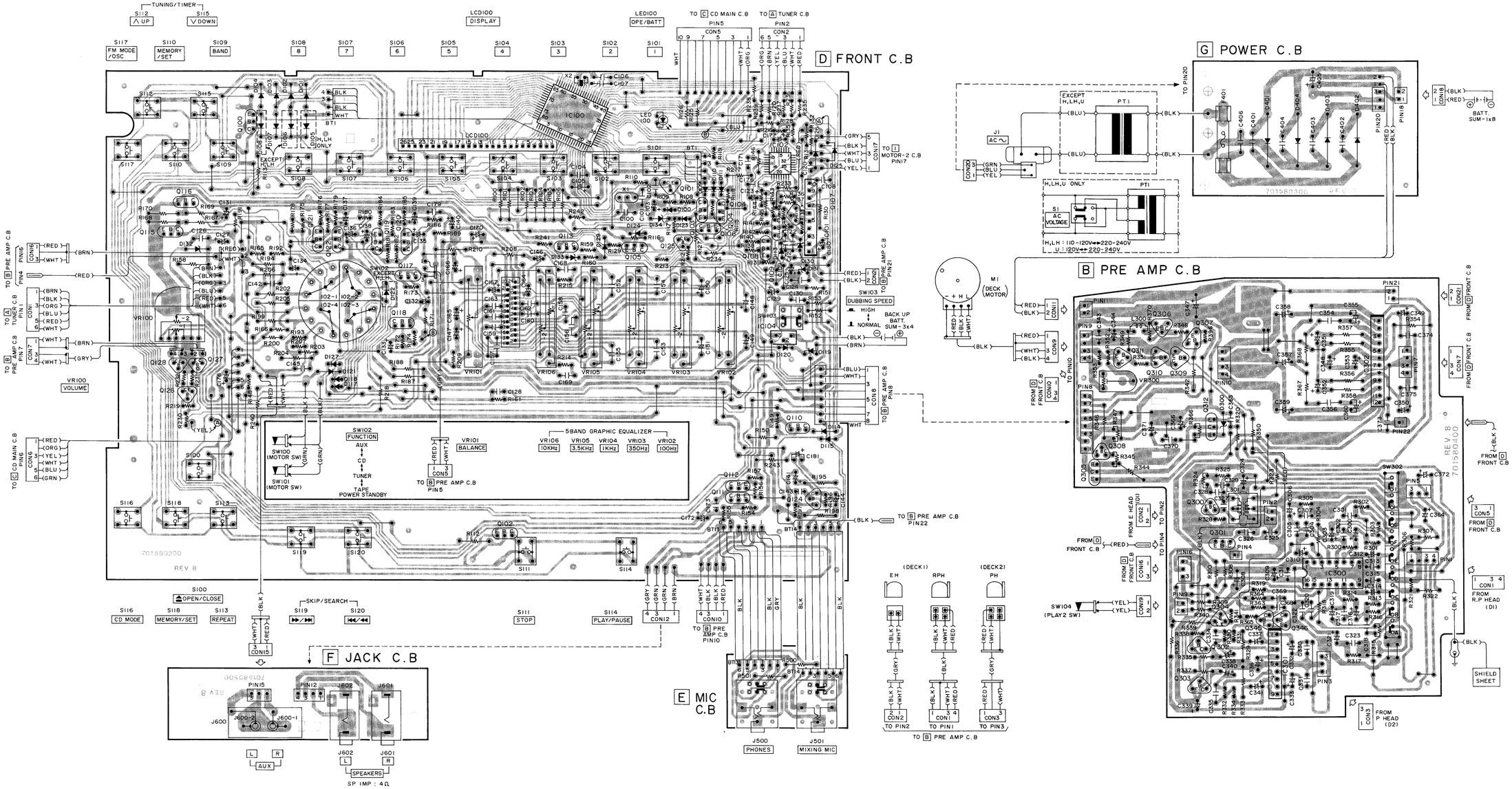
## IC DESCRIPTION – 2

## IC,BU3559CK

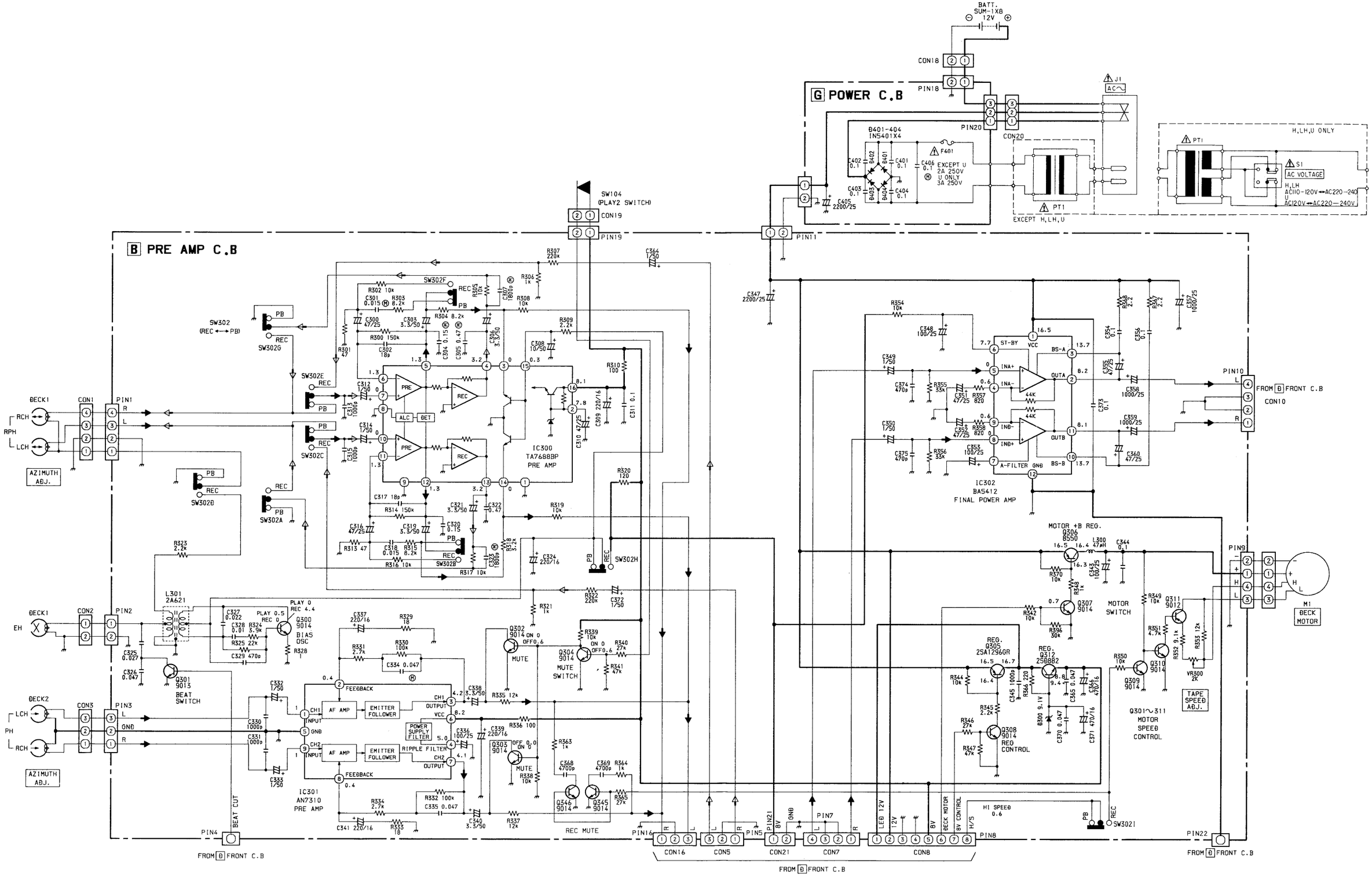
| Pin No. | Pin Name | I/O | Description |
|---|---|---|---|
| 1 | $\overline{\text{TAPE}}$ | O | Common drive Nch open drain output for the function of TP LED driver. |
| 2 | $\overline{\text{DOLBY}}$ | O | Common drive Nch open drain output for the function of the TP LED driver. |
| 3 | $\overline{\text{TAPE MODE}}$ | 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 comsumption. |
| 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. |
| 21 | ANALOG SW B | I/O | |
| 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. |
| 31 | $\overline{\text{TUNER}}$ | O | Common drive Nch open drain output for the function of TU LED driver. |
| 32 | $\overline{\text{LINE}}$ | O | Common drive Nch open drain output for the function of LINE LED |

| Function | CD | TP | TUNER | LINE |
|---|---|---|---|---|
| ANALOG SW A | H | L | L | H |
| ANALOG SW B | L | L | H | H |

| Input \ Signal | CD | TUNER | LINE | TAPE |
|---|---|---|---|---|
| CD | L | H | H | H |
| TUNER | H | L | H | H |
| LINE | H | H | L | H |
| TAPE | H | H | H | L |


D FRONT C.B
G POWER C.B
B PRE AMP C.B
E MIC C.B
F JACK C.B
TUNING/TIMER
SI12 ∧ UP
SI15 ∨ DOWN
SI17 FM MODE /OSC
SI10 MEMORY /SET
SI09 BAND
SI08 8
SI07 7
SI06 6
SI05 5
SI04 4
SI03 3
SI02 2
SI01 1
LCD100 DISPLAY
LED100 OPE/BATT
TO C CD MAIN C.B PIN5
TO A TUNER C.B PIN2
TO I MOTOR-2 C.B PIN17
TO B PRE AMP C.B PIN21
TO B PRE AMP C.B PIN8
TO B PRE AMP C.B PIN22
TO B PRE AMP C.B PIN10
TO B PRE AMP C.B PIN5
TO B PRE AMP C.B PIN6
TO B PRE AMP C.B PIN4
TO A TUNER C.B PIN1
TO B PRE AMP C.B PIN7
TO D FRONT C.B CON10
TO D FRONT C.B CON9
TO D FRONT C.B CON8
TO D FRONT C.B CON7
TO D FRONT C.B CON6
TO D FRONT C.B CON5
TO D FRONT C.B CON4
TO D FRONT C.B CON3
TO D FRONT C.B CON2
TO D FRONT C.B CON1
TO PIN20
TO PIN10
TO PIN2
TO PIN4
TO PIN1
TO PIN3
FROM D FRONT C.B
FROM E HEAD (D1) CON2
FROM R.P HEAD (D1) CON1
FROM P HEAD (D2) CON3
BATT. SUM-1x8
BACK UP BATT. SUM-3x4
DUBBING SPEED
HIGH
NORMAL
MI (DECK MOTOR)
JI AC
EXCEPT H,LH,U
H,LH ONLY
H,LH : 110-120V↔220-240V
U : 120V↔220-240V
SI AC VOLTAGE
PT1
SHIELD SHEET
SW100 (MOTOR SW)
SW101 (MOTOR SW)
SW102 FUNCTION
AUX
CD
TUNER
TAPE
POWER STANDBY
VR100 VOLUME
VR101 BALANCE
5BAND GRAPHIC EQUALIZER
VR106 10KHz
VR105 3.5KHz
VR104 1KHz
VR103 350Hz
VR102 100Hz
SW103 DUBBING SPEED
SW104 (PLAY2 SW)
S100 OPEN/CLOSE
S116 CD MODE
S118 MEMORY/SET
S113 REPEAT
S119 SKIP/SEARCH
S120
S111 STOP
S114 PLAY/PAUSE
(DECK1)
(DECK2)
EH
RPH
PH
J500 PHONES
J501 MIXING MIC
J600
J602
J601
AUX
SPEAKERS
SP IMP : 4Ω
701580200
REV 8
701580300
REV 8
701580400
REV 8

# SCHEMATIC DIAGRAM – 6 (PRE AMP)



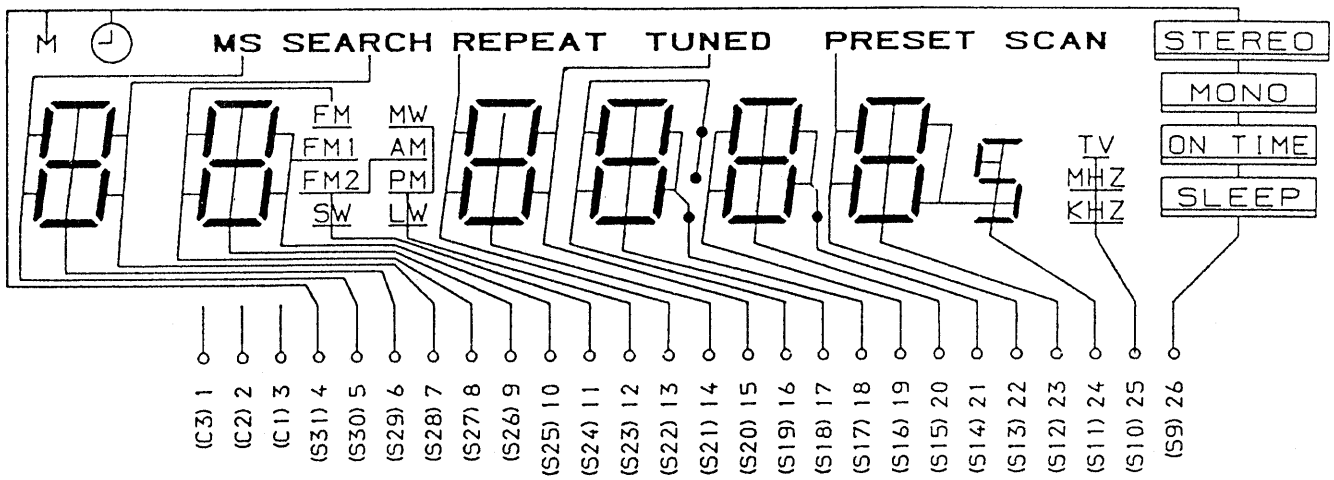
## IC DESCRIPTION – 3

## IC,TMP47C820F – N831

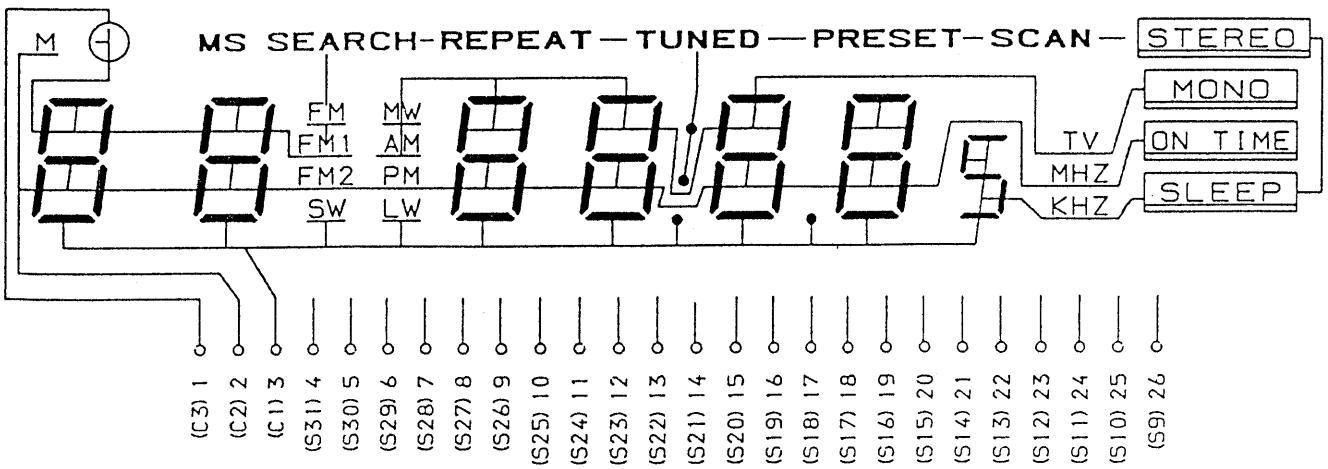
| Pin No. | Pin Name | I/O | Description |
|---|---|---|---|
| 1<br>〉<br>4 | SEG28<br>〉<br>SEG31 | O | Segment output terminal for LCD. |
| 5<br>〉<br>7 | COM1<br>〉<br>COM3 | O | Common output terminal for LCD. |
| 8 | COM4 | — | Not used. |
| 9 | N. C | — | Not used. |
| 10 | VLC | I | LCD drive voltage setting. Normal: VSS level (GND) |
| 11 | P10 | O | Power switch (ON = "H"). |
| 12<br>〉<br>14 | $\overline{KO1}$<br>〉<br>$\overline{KO3}$ | O | Key matrix output port. |
| 15 | VSS | — | GND |
| 16<br>〉<br>19 | $\overline{KO4}$<br>〉<br>$\overline{KO7}$ | O | Key matrix output port. |
| 20 | TEST | — | Not used. |
| 21 | X IN | I | 4.19 MHz clock oscillation input. |
| 22 | X OUT | O | 4.19 MHz clock oscillation output. |
| 23 | $\overline{RESET}$ | I | Reset signal input. ("L" when reset.) |
| 24 | $\overline{HOLD}$ | I | Hold signal input. (+5V) |
| 25<br>〉<br>28 | $\overline{KI1}$<br>〉<br>$\overline{KI4}$ | I | Key matrix input port. |
| 29 | $\overline{REMOTE}$ | — | Wireless remote control input. (Not used.) |
| 30 | T2 | O | Power VOL DOWN. (Not used.) |
| 31 | $\overline{INT1}$ | 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<br>〉<br>40 | BUS0<br>〉<br>BUS3 | I/O | Send/receive bus line to/from CD processor. (Not used.) |
| 41 | $\overline{CCE}$ | I/O | Command and data processing control I/O. |
| 42 | BUCK | O | Command and data send/receive clock output. |
| 43 | $\overline{PUINNER}$ | I | Detects that the pickup is positioned at the most internal cylinder.<br>Most internal cylinder when "L". |
| 44 | $\overline{DOOR}$ | I | CD door OPEN/CLOSE detection. CLOSE when "L" (+5V). |
| 45 | $\overline{CD}$ | I | Function CD. CD when "L". |

| Pin No. | Pin Name | I/O | Description |
|---|---|---|---|
| 46 | $\overline{\text{TUNER}}$ | I | Function TUNER. TUNER when "L". |
| 47 | $\overline{\text{CD RESET}}$ | 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<br>〉<br>61 | SEG 0<br>〉<br>SEG 8 | O | Not used. |
| 62<br>〉<br>80 | SEG 9<br>〉<br>SEG 27 | O | Segment output terminal for LCD display. |

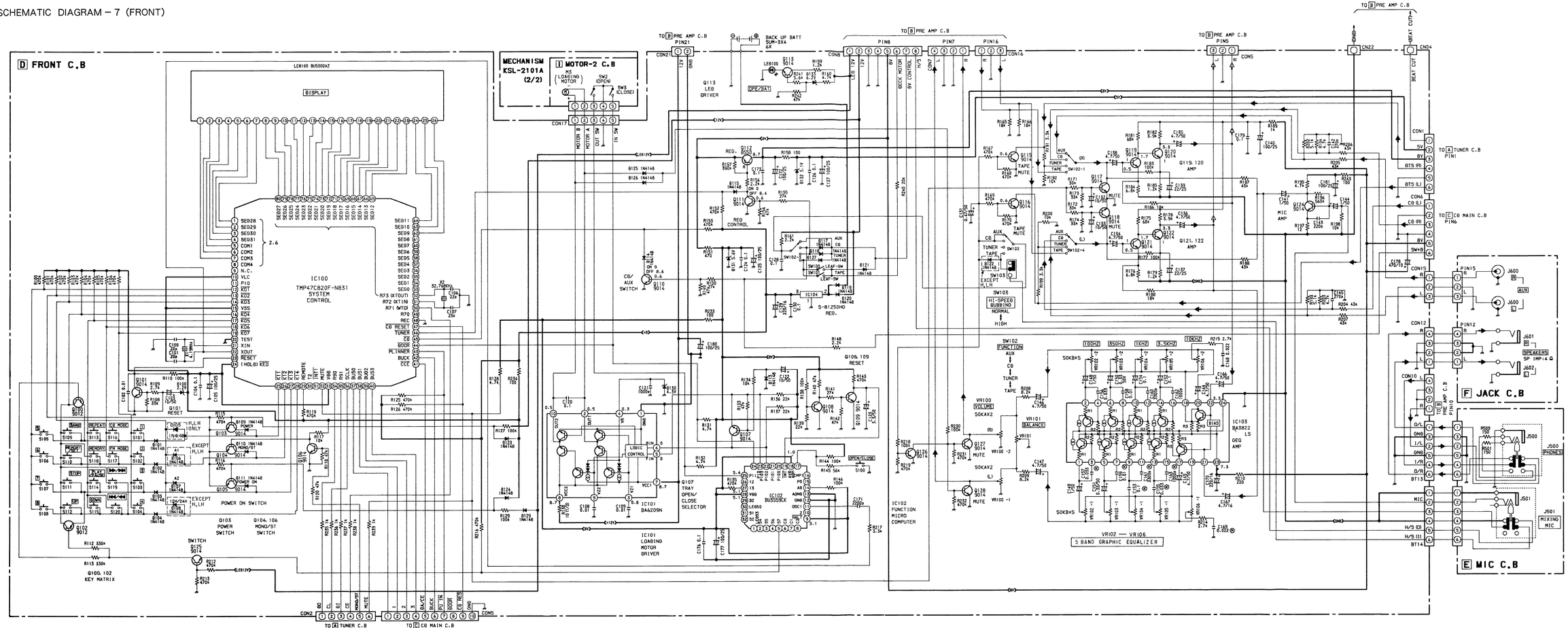
## LCD SEGMENT




## LCD COMMON



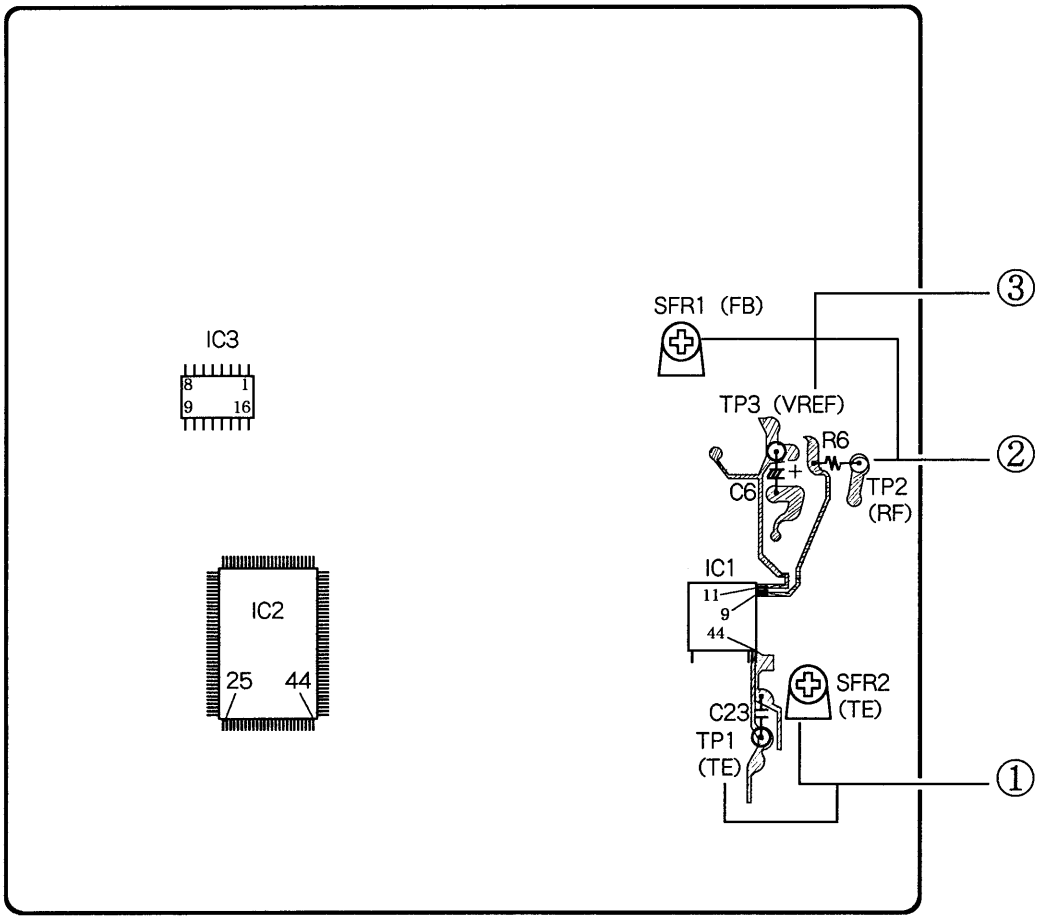
SCHEMATIC DIAGRAM – 7 (FRONT)

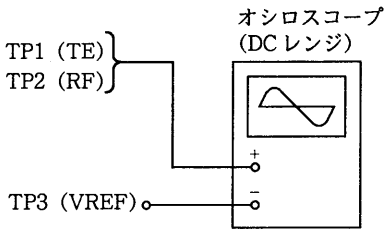


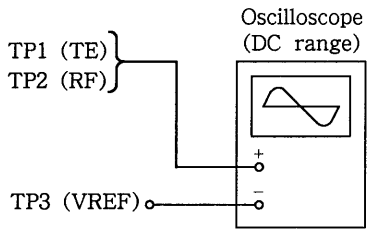
ADJUSTMENT

(CD SECTION)

## C CD MAIN C.B

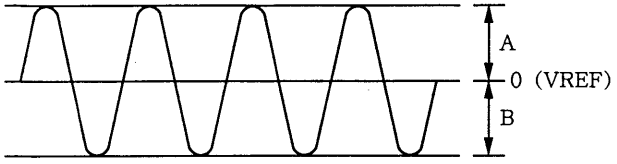



(注)：・各調整時にはオシロスコープの⊖側をTP3 (VREF) に接続して下さい。

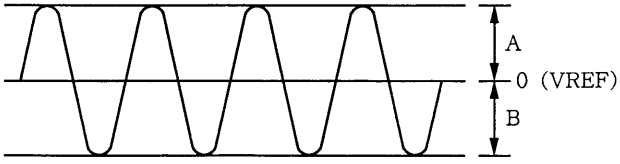
1. トラッキングバランス調整
   1) テストポイントTP1 (TE)、TP3 (VREF) にオシロスコープを接続する。
   2) テストディスクTCD-782 (YEDS-18) を入れ、PLAYボタンを押す。
   3) REPEATボタンを押してREPEATモードにする。
   4) ⏭ ボタンをくり返し押す。(MS状態)
   5) SFR2を調整し、オシロスコープのトラバース波形を、上下対称にする。




A = B　　VOLT/DIV : 20mV
TIME/DIV : 0.5 μ S

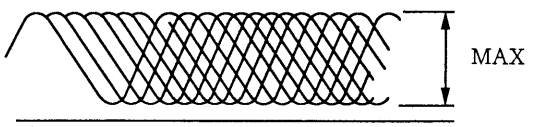
Note : • Connect the nagative side (−) of an oscilloscope to TP3 (VREF) when making adjustment.

1. Tracking Balance Adjustlment
   (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.



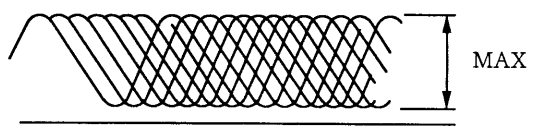

A = B　　VOLT/DIV : 20mV
TIME/DIV : 0.5 μ S

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。




VOLT/DIV : 20mV
TIME/DIV : 0.2 μ S

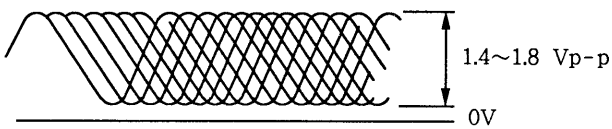
2. Focus Balance Adjustment
   (1) Connect an oscilloscope to TP2 (RF) and TP3 (VREF).
   (2) Insert the TCD-782 (YEDS-18) disc and push the PLAY button.
   (3) Adjust SFR1 (FB) so that the amplitude of the oscilloscope waveform is maximum.




VOLT/DIV : 20mV
TIME/DIV : 0.2 μ S

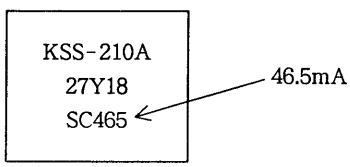
3. レーザーパワー調整
   1) テストポイントTP2 (RF)、TP3 (VREF) にオシロスコープを接続する。
   2) POWERスイッチをONにする。
   3) テストディスクTCD-782 (YEDS-18) を入れてPLAYボタンを押す。
   4) レーザーピックアップ部のVR1を調整し、波高値を1.4～1.8Vp-pにする。

RF信号波形




VOLT/DIV : 20mV
TIME/DIV : 0.2 μ S

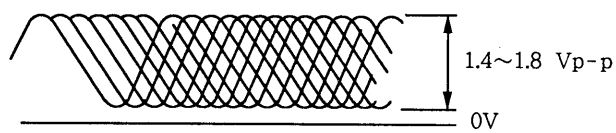
(注) レーザー電流の確認はR13 (10Ωの両端電圧) で行えます。
レーザーピックアップの裏側のラベルの電流値に対して±6.0mAに入っている事。




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

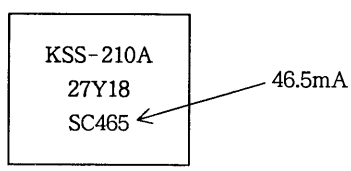
3. Laser Power Adjustment
   Make the RF waveform check when replacing or repairing the optical block.
   (1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
   (2) Insert the test disc TCD-782 (YEDS-18) and push the PLAY button.
   (3) Adjust VR1 on the optical block so that the amplitude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

RF Signal wave




VOLT/DIV : 20mV
TIME/DIV : 0.2 μ S

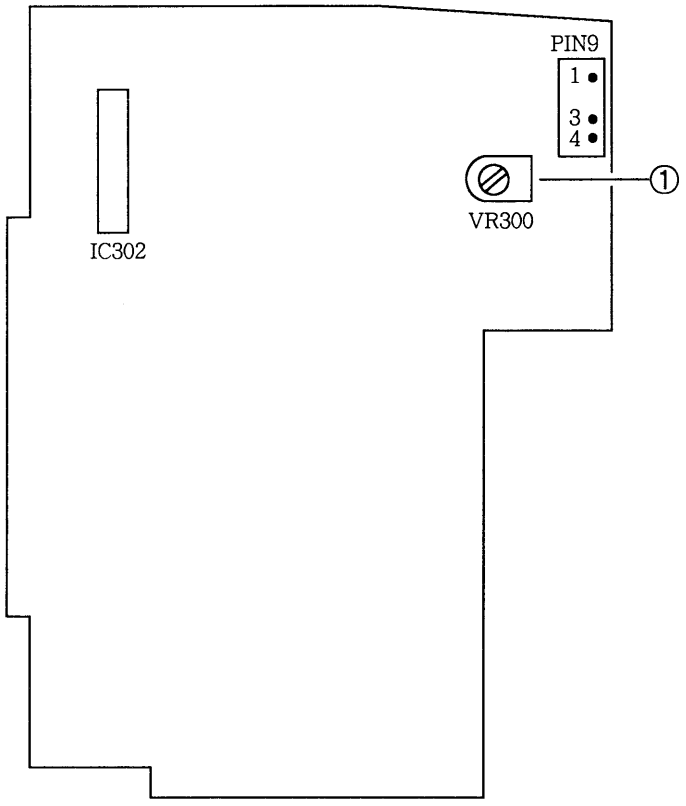
Note : The current of the laser signal can be checked with the voltages on both sides of R13 (10Ω).
The difference for the specified value shown on the label must be within ±6.0mA.



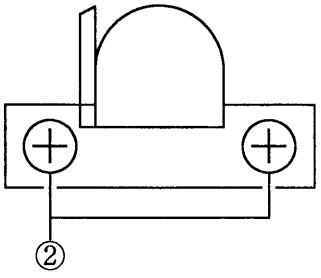

$$\text{Laser current Iop} = \frac{\text{Voltage across R13}}{10\,\Omega}$$

(DECK SECTION)

## B PRE AMP C.B




## RPH (DECK1) / PH (DECK2)



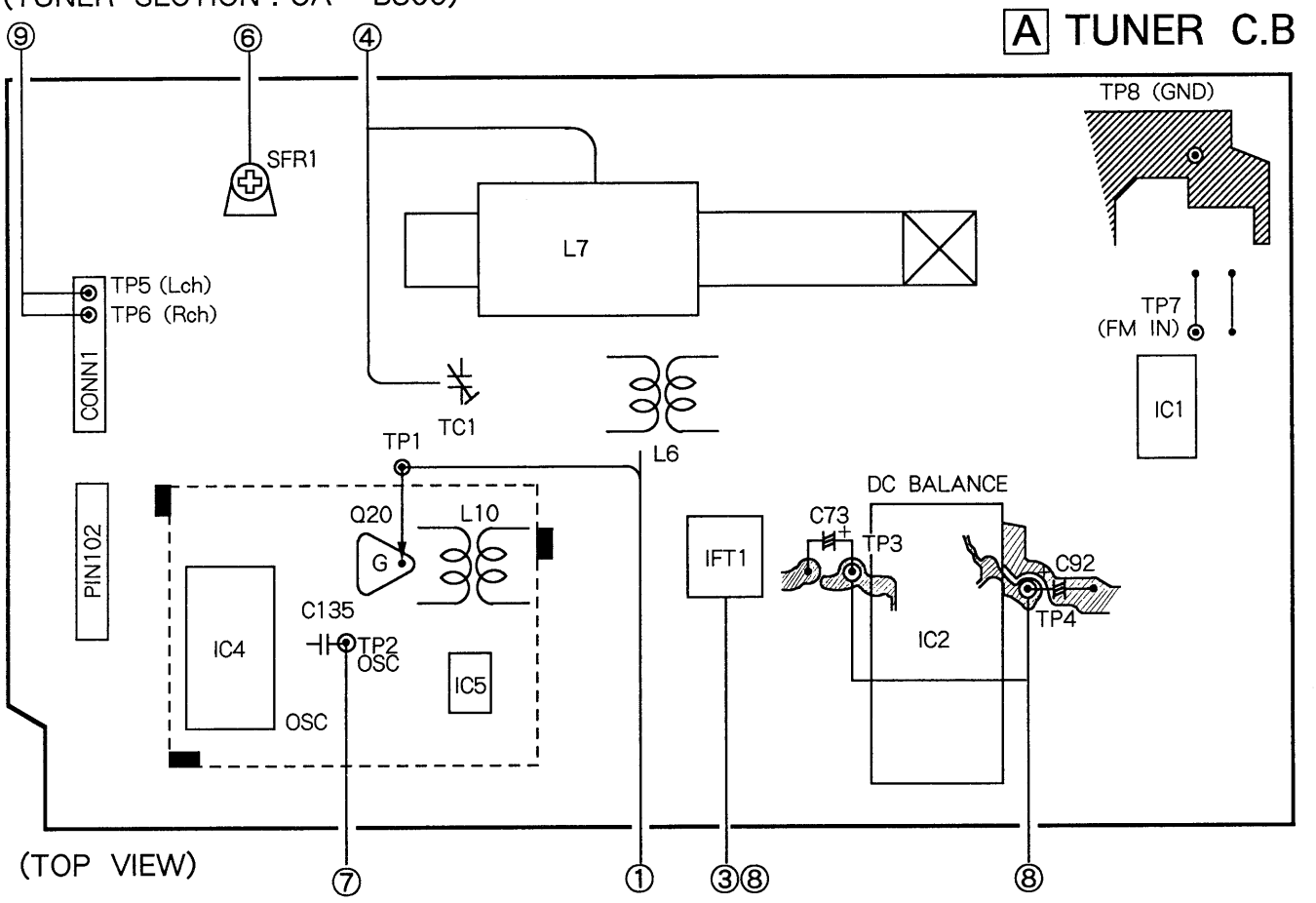

1. テープスピード調整（デッキ1, デッキ2）
   条件：・テストテープ：TTA－100（TTA－111S）
   ・調整箇所：VR300
   方法：デッキ1でテストテープを再生し、3000Hzになる様に調整する。調整後、デッキ2が3000Hz±55Hzである事を確認する。

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 ±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)




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±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±0.4V
   　　108MHz　：8.1±0.5V

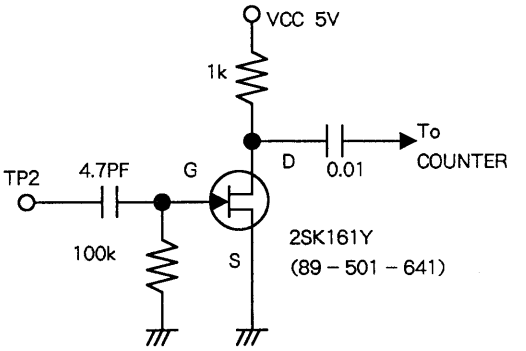
3. FM IF調整
   IFT1 ····· (10.7MHz)

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±6dB
   90MHz ····· 13±6dB
   3CH ····· 12±6dB

6. FMチューニング調整
   条件：・調整箇所： SFR1
   方法：FM76.0MHzで、30±1dBになる様にSFR1を調整します。

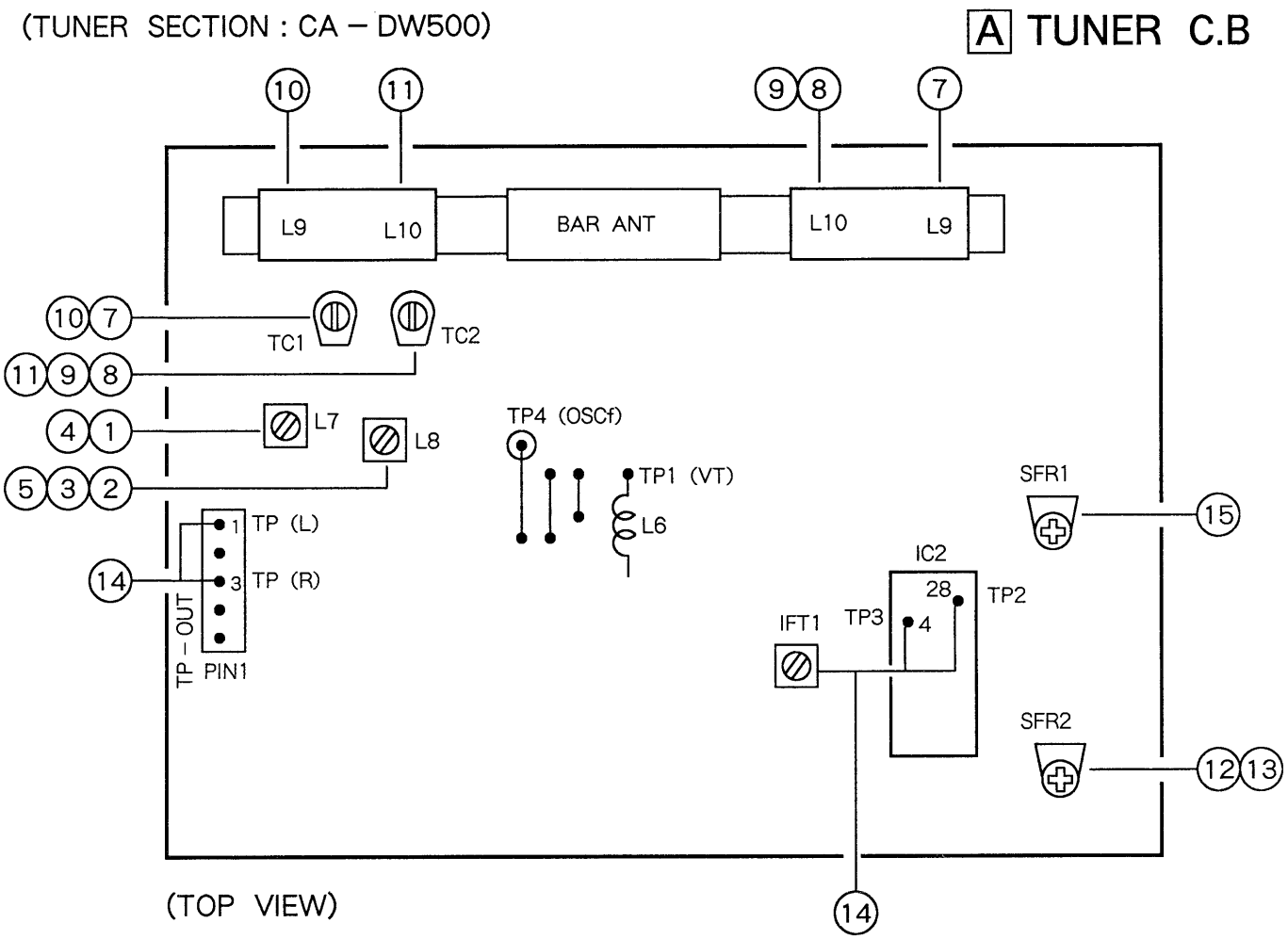
7. OSC周波数確認
   条件：・テストポイント： TP2
   方法：テストポイントにバッファ回路を接続します。
   FM周波数を76.0MHzにし、発振周波数が65.25MHz±0.001MHzである事を確認します。




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±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。

(TUNER SECTION : CA – DW500)




< RADIO SECTION >

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 ± 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 ± 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 ± 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 ± 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 ± 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 ± 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

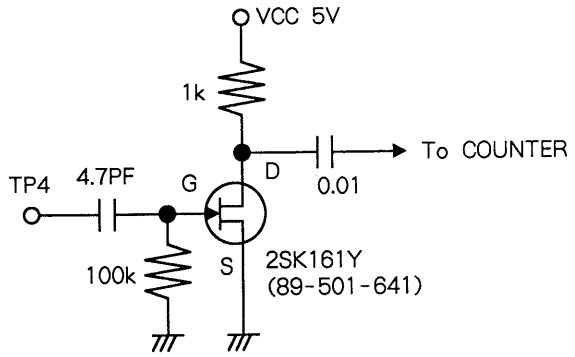
12. AM (MW) AUTO STOP LEVEL Adjustment (H, U, LH)
Settings : • Adjustment location : SFR2
• Input level : 60 ± 5dB
Method : Set to MW, 1404kHz (H), 1400kHz (U, LH) and adjust TUNED Indicator (LCD1) to light on by SFR2.
After that, TUNED Indicator (LCD1) goes out by 2dB down.

13. LW AUTO STOP LEVEL Adjustment (E, Z)
Settings : • Adjustment location : SFR2
• Input level : 58 ± 5dB
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 0V ± 0.01V.

15. FM AUTO STOP LEVEL Adjustment
Settings : • Adjustment location : SFR1
• Input level : 31 ± 5dB
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 ± 0.01MHz.




## 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 ± 6dB (at 999kHz) |
| 中間周波数 | : | FM 10.7MHz |
| | | AM 450kHz |
| FMステレオ分離度 | : | FM 28 ± 5dB (90MHz) |

<テープレコーダ部>

| | | |
|---|---|---|
| バイアス周波数 | : | 71.5 ± 0.5kHz |
| 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 ± $\frac{3}{2}$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 ± 4dB (999kHz) |
| (S/N 10dB) | SW Less than 48dB (8MHz) |

LH, U MODELS

| | |
|---|---|
| Sensitivity : | |
| (IHF, THD 3%) | FM Less tham 24dB (98MHz) |
| (S/N 10dB) | AM 50 ± 4dB (1000kHz) |

E, EE, Z MODELS

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

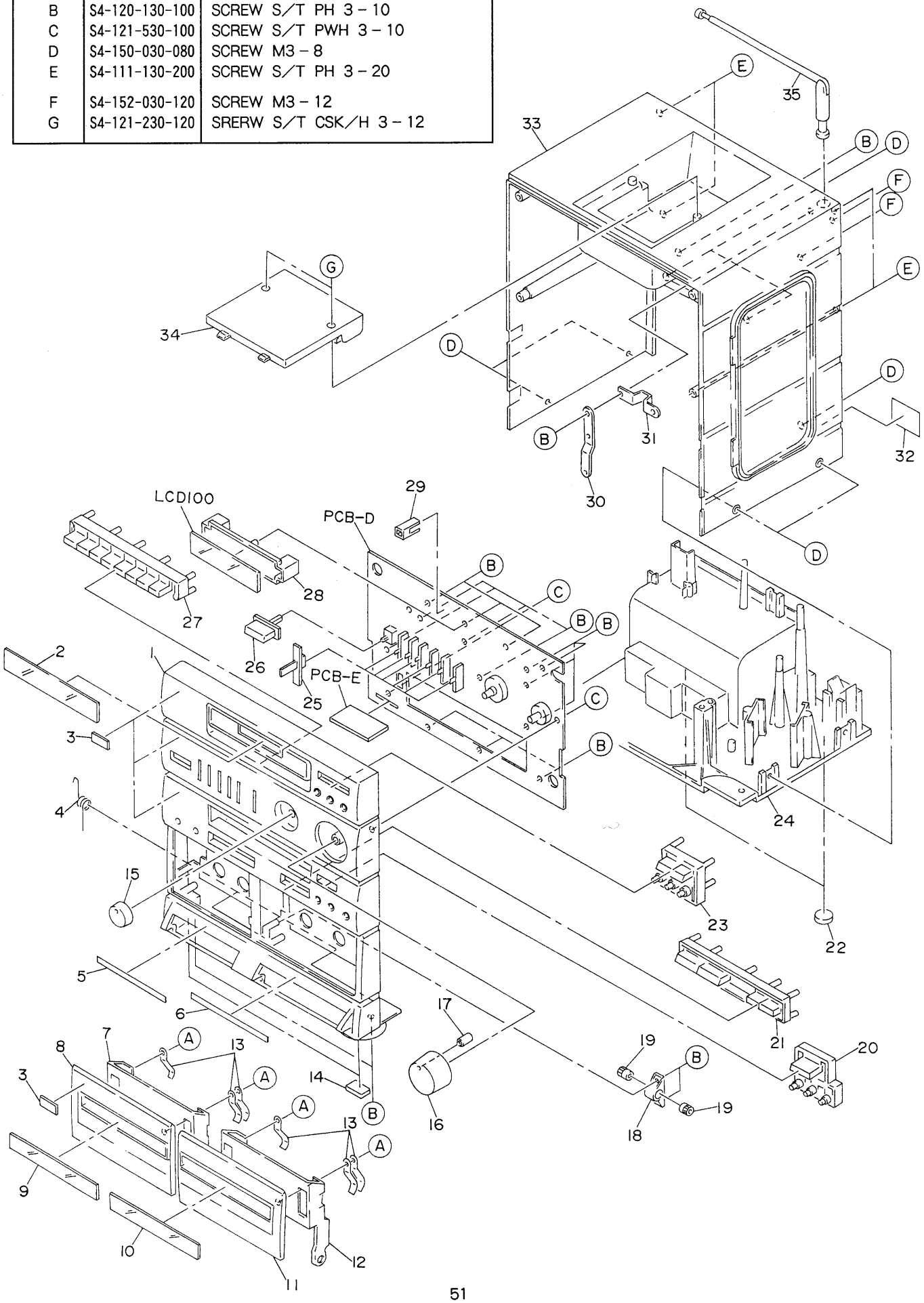
| | |
|---|---|
| Intermediate frequency : | FM 10.7MHz |
| | AM 450kHz |
| FM stereo separation : | 27 ± 3dB (98MHz) |

< TAPE RECORDER SECTION >

| | |
|---|---|
| Recording bias frequency : | 71.5 ± 0.5kHz |
| 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 ± $\frac{3}{2}$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 |

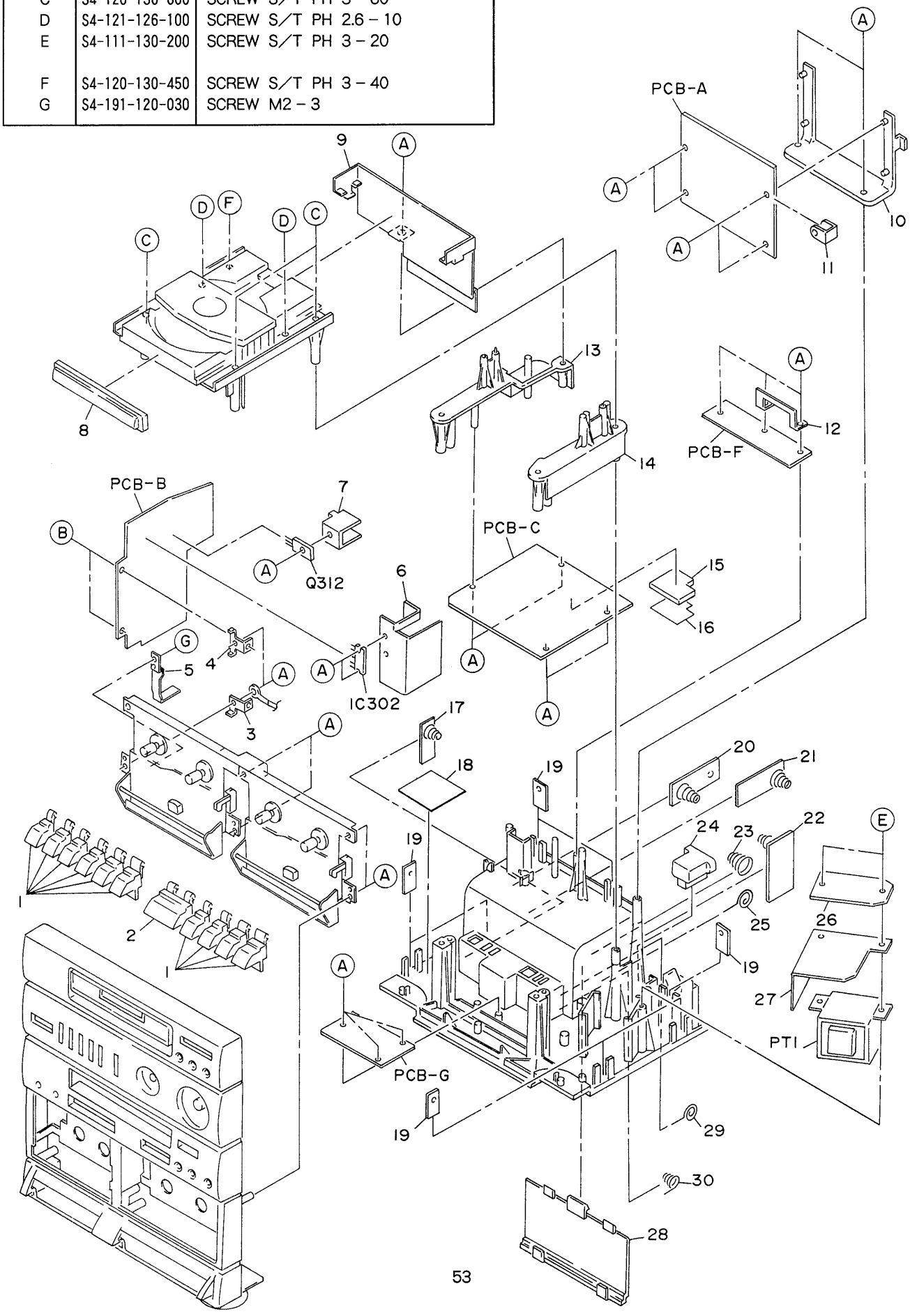


# MECHANICAL PARTS LIST

| PART NO. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON 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

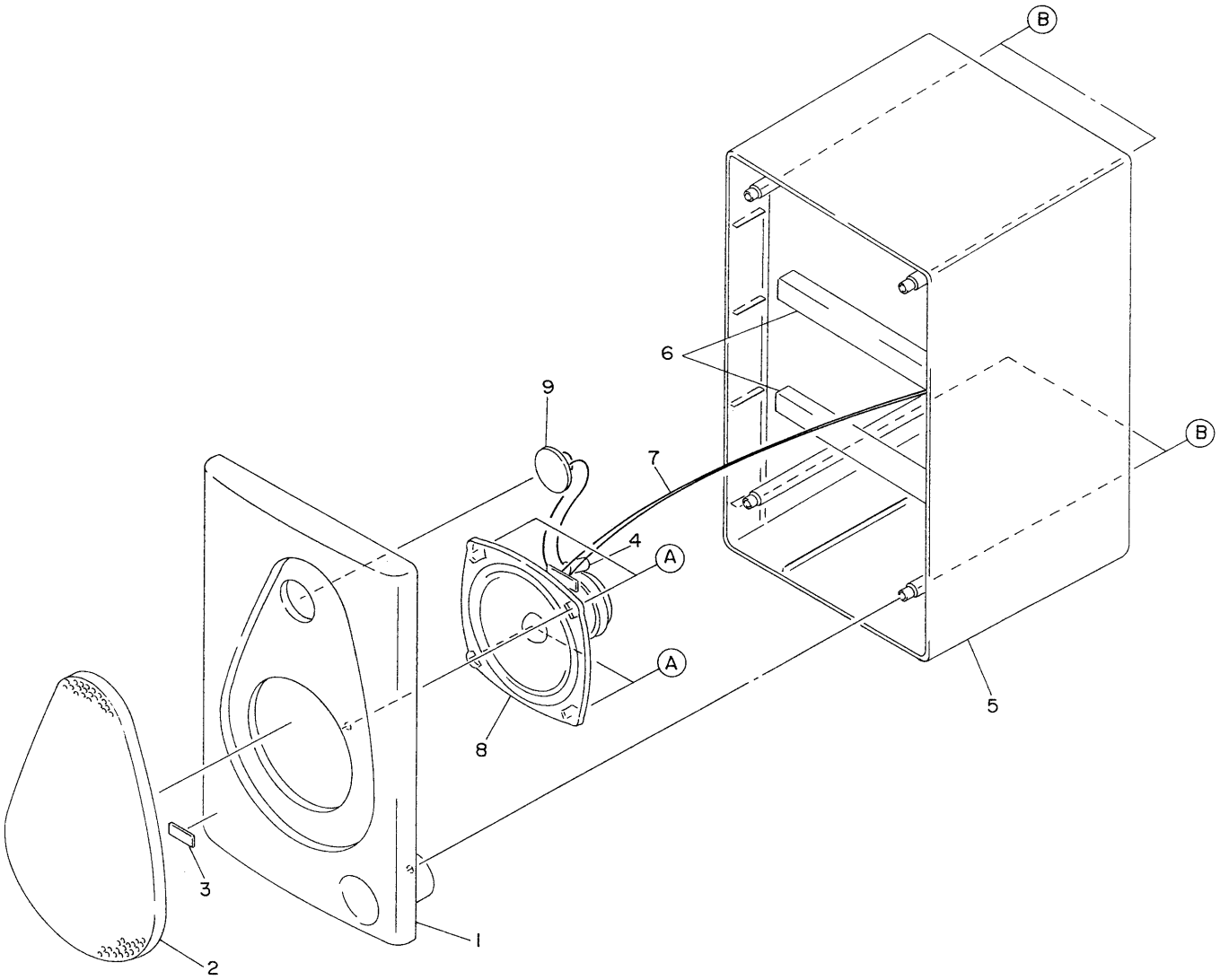
| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| A | S4-120-130-100 | SCREW S/T PH 3 – 10 |
| B | S4-150-030-040 | SCREW M3 – 4 NI |
| C | S4-120-130-600 | SCREW S/T PH 3 – 60 |
| D | S4-121-126-100 | SCREW S/T PH 2.6 – 10 |
| E | S4-111-130-200 | SCREW S/T PH 3 – 20 |
| F | S4-120-130-450 | SCREW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



| PART NO. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON 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

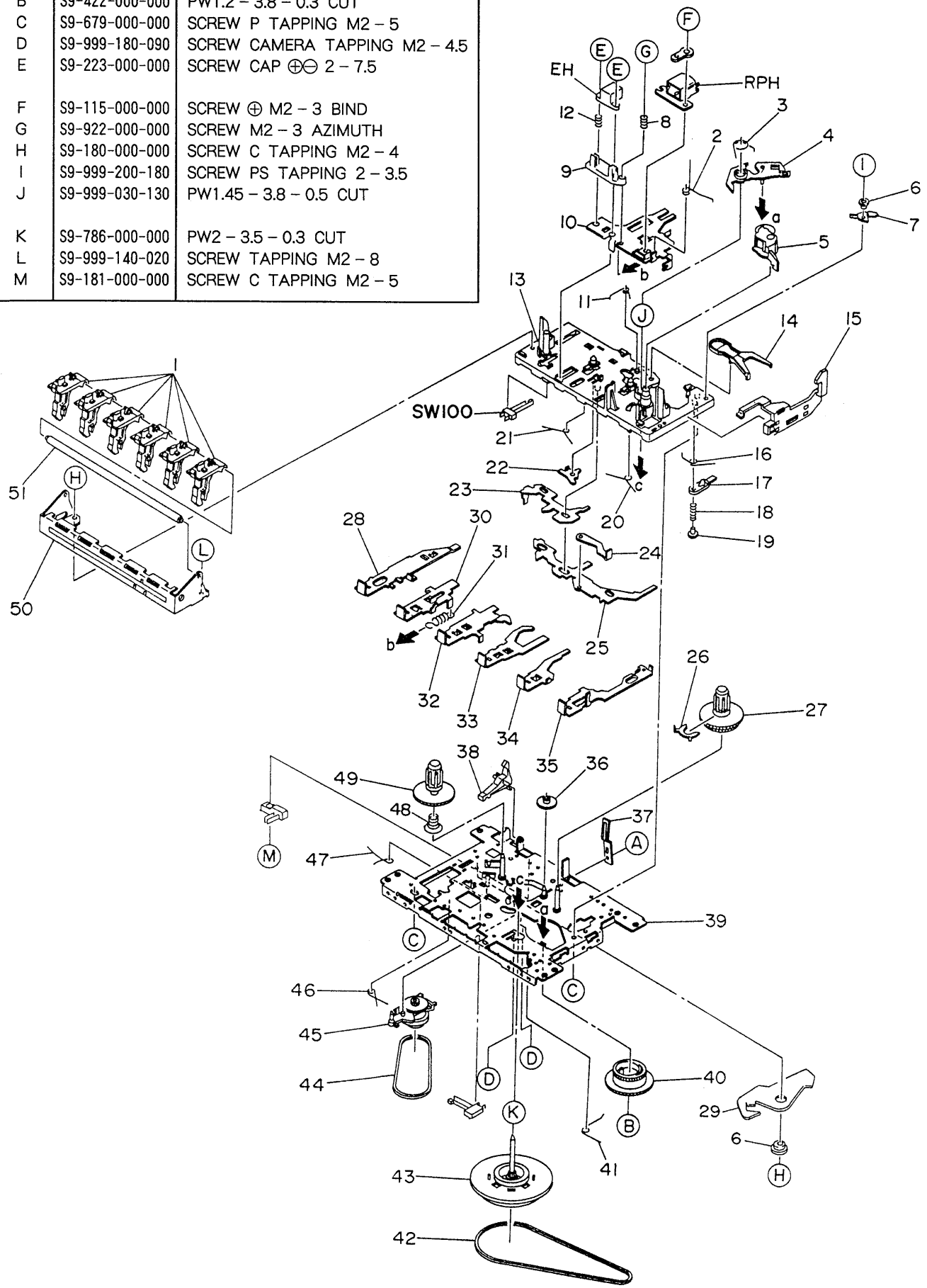
| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| A | S4-121-530-100 | SCREW S/T PWH 3 – 10 |
| B | S4-111-130-200 | SCREW S/T PH 3 – 20 |




| PART NO. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON 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

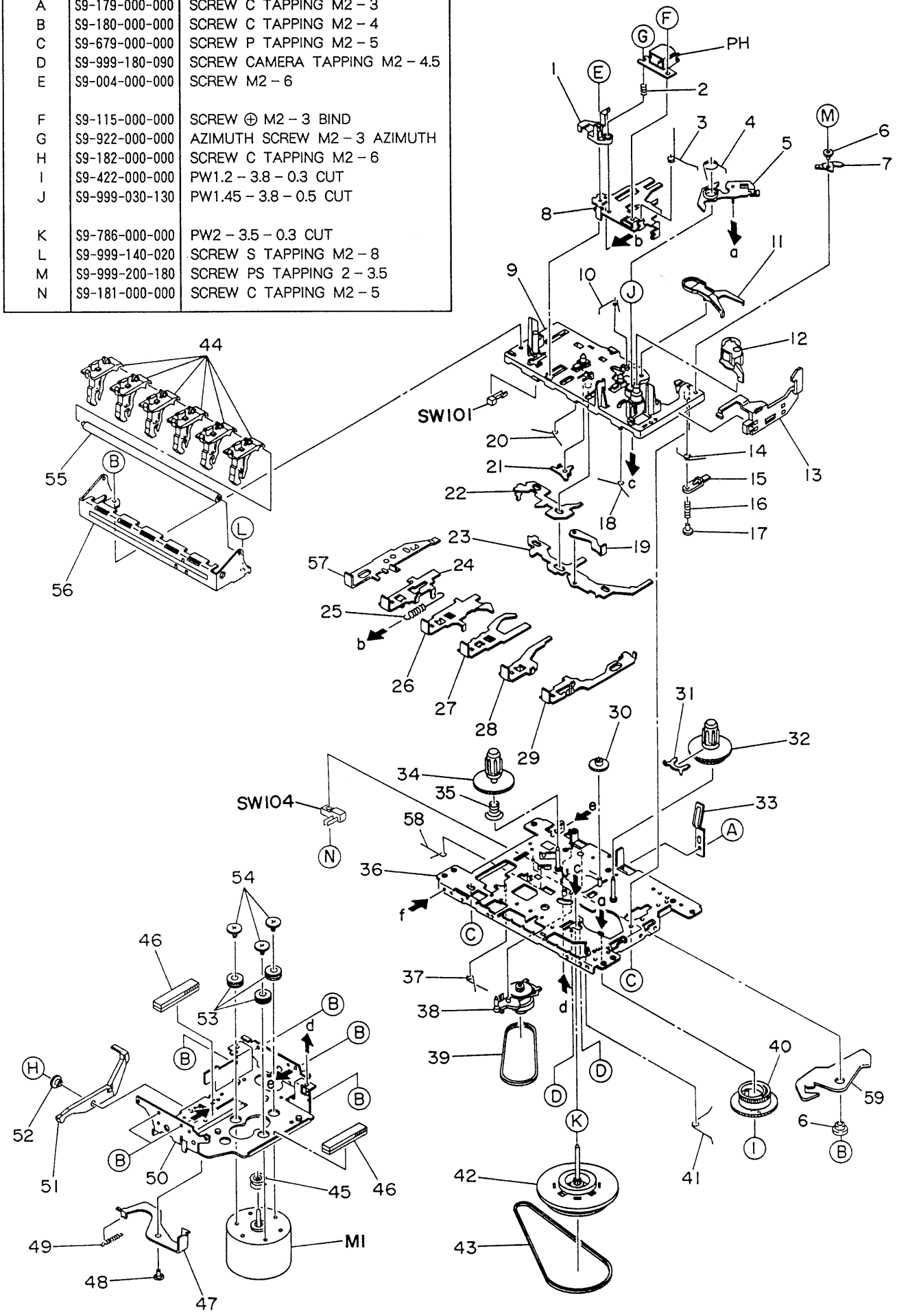
| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| A | S9-179-000-000 | SCREW C TAPPING M2 – 3 |
| B | S9-422-000-000 | PW1.2 – 3.8 – 0.3 CUT |
| C | S9-679-000-000 | SCREW P TAPPING M2 – 5 |
| D | S9-999-180-090 | SCREW CAMERA TAPPING M2 – 4.5 |
| E | S9-223-000-000 | SCREW CAP ⊕⊖ 2 – 7.5 |
| F | S9-115-000-000 | SCREW ⊕ 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. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON 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 |

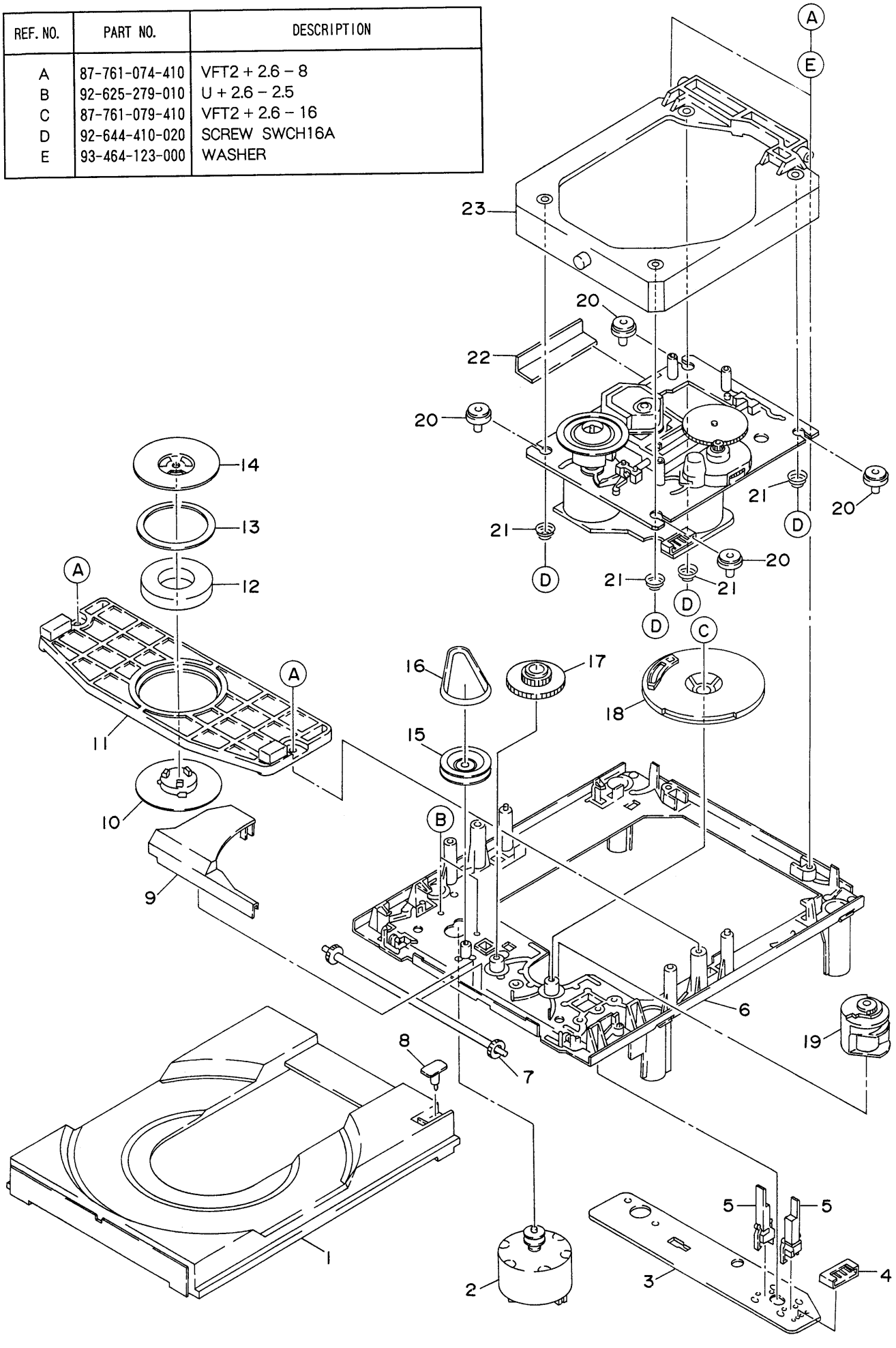


| PART NO. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON MODEL | Q'TY |
|---|---|---|---|---|---|---|
| | 5-1 | ★S1-921-030-040 | 0E | BASE, HEAD | | 1 |
| | 5-2 | ★S1-821-030-070 | 0E | SPRING, AZIMUTH | | 1 |
| | 5-3 | ★S1-921-030-090 | 0E | P – SPRING, PANEL | | 1 |
| | 5-4 | ★S1-921-260-050 | 0E | SPRING, GEAR PLATE | | 1 |
| | 5-5 | ★S1-921-265-020 | 0E | GEAR PLATE ASSY | | 1 |
| | 5-6 | ★S1-921-140-370 | 0E | 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 | 0E | M – SPRING, CONTROL | | 1 |
| | 5-11 | ★S1-921-260-4A0 | 0E | LEVER, SENSING | | 1 |
| | 5-12 | ★S1-921-043-100 | 1C | PINCH ROLLER ARM ASSY | | 1 |
| | 5-13 | ★S1-921-130-020 | 0E | LEVER, EJECT SLIDE | | 1 |
| | 5-14 | ★S1-921-140-130 | 0E | P – SPRING, CONTROL | | 1 |
| | 5-15 | ★S1-921-140-550 | 0E | LEVER, PAUSE E | | 1 |
| | 5-16 | ★S1-921-140-120 | 0E | SPRING, PAUSE LEVER | | 1 |
| | 5-17 | ★S1-921-140-110 | 0E | STOPPER, PAUSE | | 1 |
| | 5-18 | ★S1-921-140-150 | 0E | SPRING, BUTTON LEVER B | | 1 |
| | 5-19 | ★S1-821-011-590 | 0E | LEVER, E KICK | | 1 |
| | 5-20 | ★S1-921-140-140 | 0E | SPRING, BUTTON LEVER A | | 1 |
| | 5-21 | ★S1-921-140-200 | 0E | STOPPER, PR | | 1 |
| | 5-22 | ★S1-921-140-400 | 0E | ACTUATOR, SWITCH | | 1 |
| | 5-23 | ★S1-921-140-080 | 0E | ACTUATOR, PUSH BUTTON | | 1 |
| | 5-24 | ★S1-921-140-230 | 0E | LEVER, PLAY BUTTON | | 1 |
| | 5-25 | ★S1-821-010-500 | 0E | SPRING, PLAY BUTTON LEVER | | 1 |
| | 5-26 | ★S1-921-140-240 | 0E | LEVER, REW BUTTON | | 1 |
| | 5-27 | ★S1-921-140-250 | 0E | LEVER, FF BUTTON | | 1 |
| | 5-28 | ★S1-921-140-260 | 0E | LEVER, STOP BUTTON | | 1 |
| | 5-29 | ★S1-921-140-610 | 0E | LEVER, PAUSE BUTTON | | 1 |
| | 5-30 | ★S1-821-100-700 | 0E | GEAR, FF | | 1 |
| | 5-31 | ★S1-921-050-060 | 0E | SENSOR | | 1 |
| | 5-32 | ★S1-921-053-030 | 1F | TAKE UP REEL ASSY | | 1 |
| | 5-33 | ★S1-829-100-010 | 0E | SPRING, PACK | | 1 |
| | 5-34 | ★S1-921-053-040 | 1E | SUPPLY REEL ASSY | | 1 |
| | 5-35 | ★S1-821-100-990 | 0E | SPRING, BACK TENSION | | 1 |
| | 5-36 | ★S1-921-015-010 | 1D | CHASSIS ASSY | | 1 |
| | 5-37 | ★S1-921-140-170 | 0E | 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 | 0E | GEAR, CAM | | 1 |
| | 5-41 | ★S1-921-140-160 | 0E | 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 | 0E | LEVER, OPERATION | | 6 |
| | 5-45 | ★S1-921-120-130 | 0E | 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 | 0E | 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. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON 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

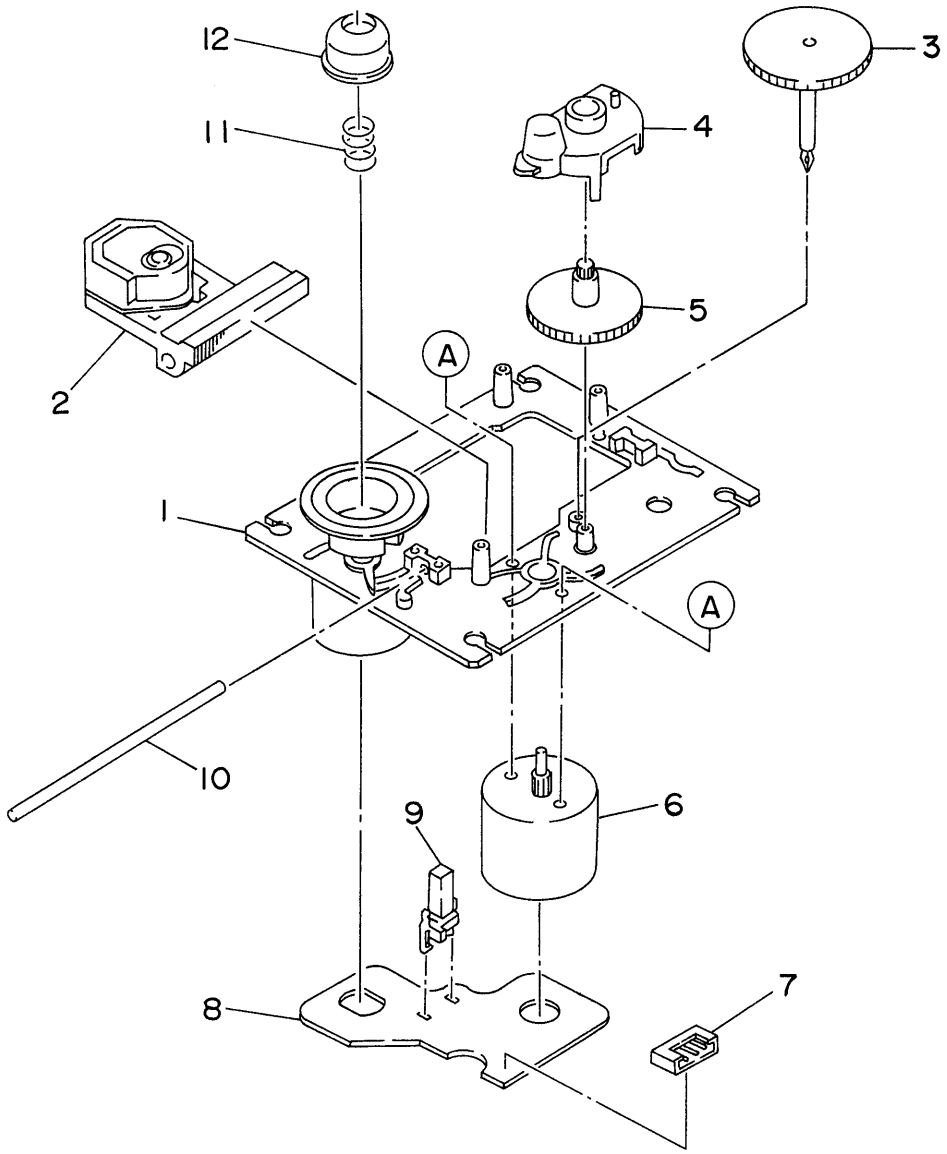
| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| A | 87-761-074-410 | VFT2 + 2.6 – 8 |
| B | 92-625-279-010 | U + 2.6 – 2.5 |
| C | 87-761-079-410 | VFT2 + 2.6 – 16 |
| D | 92-644-410-020 | SCREW SWCH16A |
| E | 93-464-123-000 | WASHER |



| PART NO. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON 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. CHANGED TO | REF. NO. | PART NO. | カンリ NO. | DESCRIPTION | COMMON 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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Printed in Japan