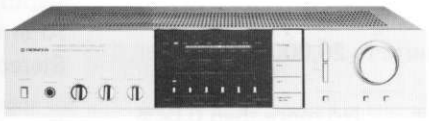
PIONEER

# Service Manual

## REPAIR & ADJUSTMENTS



ORDER NO.
ARP-015-0

## COMPUTER CONTROLLED STEREO RECEIVER

# SX-4

MODEL SX-4 COMES IN FOUR VERSIONS DISTINGUISHED AS FOLLOWS:

| Type | Voltage | Remarks |
|---|---|---|
| KU | AC 120V only | U.S.A. model |
| S | AC 110V, 120V, 220V and 240V (Switchable) | General export model |
| KC | AC 120V only | Canada model |
| YP | AC 240V only | Australia model |

- This service manual is applicable to the KU type.
- For the circuit description, please refer to the model SX-7 service manual (ARP-047-0).
- Ce manuel d'instruction se refère au mode de réglage, en français.
- Este manual de servicio trata del método de ajuste escrito en español.

## CONTENTS


1. SPECIFICATIONS . . . . . 2
2. FRONT PANEL FACILITIES . . . . . 4
3. PARTS LOCATION . . . . . 6
4. PACKING . . . . . 7
5. BLOCK DIAGRAM . . . . . 8
6. P.C.BOARDS CONNECTION DIAGRAM . . . . . 9
7. SCHEMATIC DIAGRAM . . . . . 13
8. ELECTRICAL PARTS LIST . . . . . 17
9. EXPLODED VIEW . . . . . 21
10. ADJUSTMENTS . . . . . 23
    RÉGLAGE . . . . . 25
    AJUSTE . . . . . 27



**PIONEER ELECTRONIC CORPORATION** 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
**U.S. PIONEER ELECTRONICS CORPORATION** 85 Oxford Drive, Moonachie, New Jersey 07074, U.S.A.
**PIONEER ELECTRONIC (EUROPE) N.V.** Luithagen-Haven 9, 2030 Antwerp, Belgium
**PIONEER ELECTRONICS AUSTRALIA PTY. LTD.** 178-184 Boundary Road, Braeside, Victoria 3195, Australia

# 1. SPECIFICATIONS

## Amplifier Section

Continuous Average Power Output is 20 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.04% total harmonic distortion.

Total Harmonic Distortion (20 Hertz to 20,000 Hertz, 8 ohms, from AUX/VIDEO)
- continuous rated power output . . No more than 0.04%
- 10 watts per channel power output . . . . . No more than 0.04%

Intermodulation Distortion (50 Hertz: 7,000 Hertz = 4 : 1, 8 ohms, from AUX/VIDEO)
- continuous rated power output . . No more than 0.04%

Damping Factor (20 Hertz to 20,000 Hertz, 8 ohms) . . . . . 50

Input (Sensitivity/Impedance)
- PHONO . . . . . 2.5mV/50 kilohms
- AUX/VIDEO TAPE PLAY . . . . . 150mV/50 kilohms

Phono Overload Level (T.H.D. 0.1%, 1,000Hz)
- PHONO . . . . . 130mV

Output (Level/Impedance)
- TAPE REC . . . . . 150mV/2.2 kilohms

Frequency Response
- PHONO (RIAA Equalization) . . . . . 30Hz to 15,000Hz±0.5dB
- AUX/VIDEO, TAPE PLAY . . . . . 10Hz to 50,000Hz $^{+0.5}_{-3}$dB

Tone Control
- BASS . . . . . ±8dB (100Hz)
- TREBLE . . . . . ±8dB (10kHz)

Loudness Contour (Volume control set at –40dB position) . . . . . +6dB (100Hz)

Hum and Noise (IHF, short circuited A network)
- PHONO . . . . . 70dB
- AUX/VIDEO, TAPE PLAY . . . . . 96dB

## FM Tuner Section

Usable Sensitivity . Mono; 11.2dBf (IHF) (1.0μV, 75 ohms)

50dB Quieting Sensitivity . . . . . Mono; 16.3dBf (1.8μV, 75 ohms)
Stereo; 37.2dBf (19.9μV, 75 ohms)

Signal-to-Noise Ratio . . . . . Mono; 75dB (at 85dBf)
Stereo; 70dB (at 85dBf)

Distortion (at 65dBf)
- Mono . . . . . 100Hz; 0.15%
  1kHz; 0.15%
  6 kHz; 0.2%
- Stereo . . . . . 100Hz; 0.3%
  1kHz; 0.3%
  6kHz; 0.4%

Capture Ratio . . . . . 1.0dB

Alternate Channel Selectivity . . . . . 400kHz; 60dB

Stereo Separation . . . . . 1kHz; 40dB
30Hz to 15kHz; 35dB

Frequency Response . . . . . 20Hz to 15kHz +0.5dB, –1dB

Spurious Response Ratio . . . . . 65dB

Image Response Ratio . . . . . 65dB

IF Response Ratio . . . . . 90dB

AM Suppression Ratio . . . . . 55dB

Subcarrier Product Ratio . . . . . 40dB

SCA Rejection ratio . . . . . 60dB

Muting Threshold . . . . . 29.3dBf (8μV)

Antenna Input . . 300 ohms balanced, 75 ohms unbalanced

## AM Tuner Section

Sensitivity
- IHF, ferrite antenna . . . . . 300μV/m
- IHF, external antenna . . . . . 15μV

Selectivity . . . . . 27dB

Signal-to-Noise Ratio . . . . . 50dB

Image Response Ratio . . . . . 40dB

IF Response Ratio . . . . . 73dB

Antenna . . . . . Built-in ferrite loopstick antenna

## Miscellaneous

Power Requirements . . . . . AC 120V, 60Hz

Power Consumption . . . . . 200W (UL)

Dimensions . . . . . 420(W) x 98(H) x 311(D) mm
16-9/16(W) x 3-7/8(H) x 12-1/4(D) in

Weight (without package) . . . . . 5.2 kg (11 lb 7 oz)

## Furnished Parts

FM T-type Antenna . . . . . 1

Dry Battery SUM-3 "AA" . . . . . 2

Operating Instructions . . . . . 1

**Measured pursuant to the federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.*

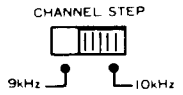
*NOTE:*
*Specifications and design subject to possible modification without notice.*

## SETTING USE THE AM CHANNEL STEP SWITCH (on the rear panel)

Before the receiver leaves the manufacturing plant, this switch is set to the channel allotment plan of the destination. For the U.S.A., it is set to 10kHz. Check that the switch is set properly before use.

Set it to the 9kHz position when the channel allotment plan is changed and the intervals between the AM broadcasting stations change from 10kHz to 9kHz units.

*NOTE:*
*Contact your dealer and inquire if you are not sure about the channel allotment plan.*




10kHz position

## LOADING THE BATTERIES

Two size "AA" dry batteries are provided as accessories. They are used to retain the station presetting memory functions.

Before using the unit, disconnect the power cord and load the batteries into the compartment on the rear panel as follows:

1. Slide the lid in the direction of the arrow and open the compartment (see Fig. 1).
2. Load the batteries with the polarities properly aligned with the marks on the inside of the compartment (see Fig. 2).
3. Align the tab of the lid with the interlocking hole and depress the lid lightly.

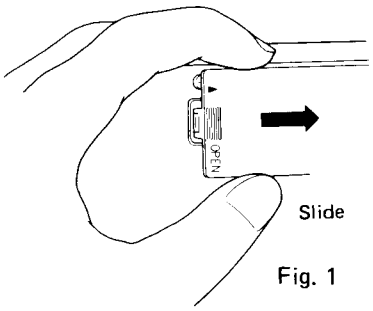



Fig. 1

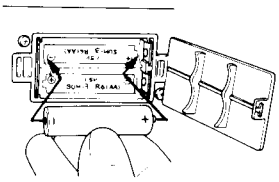


Fig. 2

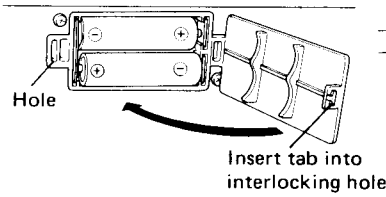



Fig. 3

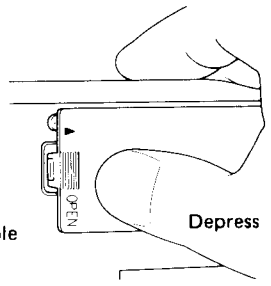


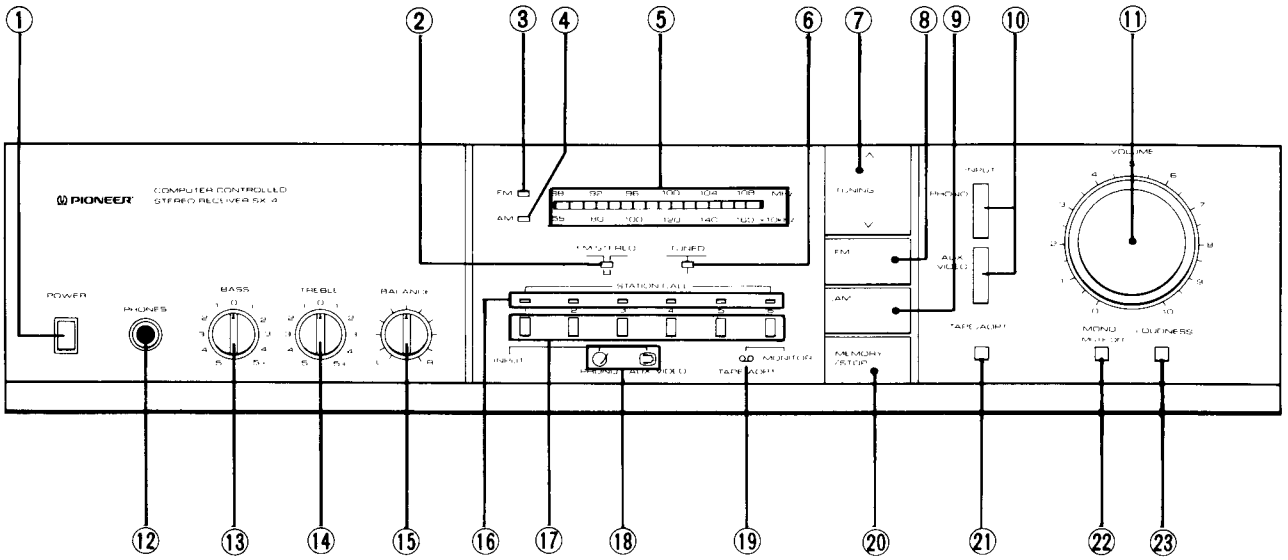

Fig. 4

### Battery Precautions:

If batteries are incorrectly used, they may leak or even break open inside the battery holder. Observe the following precautions when inserting and replacing the batteries.

1. Always be sure the + and – ends are aligned properly as shown above and as marked on the battery holder.
2. Do not use new batteries and partly used batteries at the same time.
3. Do not use different brands and types of batteries at the same time.
4. There are rechargeable dry cell batteries and non-rechargeable dry cell batteries. Always read the notes on the battery to be sure which kind you have.
5. When replacing the batteries, always use the same type of batteries (carbon zinc) as the ones originally provided with the receiver. Do not use alkaline and nickel cadmium type batteires.

# 2. FRONT PANEL FACILITIES




## ① POWER SWITCH

Power is supplied to the unit when this switch is depressed ("in" position).

## ② FM STEREO INDICATOR

This lights when receiving an FM stereo program.

## ③ FM INDICATOR

This lights when receiving the FM broadcasts. (This lights when depressed the FM switch).

## ④ AM INDICATOR

This lights when receiving the AM broadcasts.

## ⑤ FREQUENCY SCALE

This scale is composed of 16 light-emitting diodes (LEDs). During frequency scanning, the lighting moves from left to right or vice versa, depending on the direction corresponding to the TUNING SWITCH which has been depressed.

## ⑥ TUNED INDICATOR

This lights when the optimum tuning point has been located during reception. It blinks when stations are being searched.

## ⑦ TUNING switch

This is used to tune in broadcasting stations. When depressed, the LEDs on the frequency scale light up in the leftward or rightward direction, depending on the direction corresponding to the part of the TUNING switch which has been depressed, and frequency scanning starts. The TUNED indicator now starts to blink.

When a station is located, the LEDs stop moving and the TUNED indicator lights up.

The sound from the station can be heard in about 5 seconds. After that sound has been heard for these few seconds, the frequency scanning operation starts again. In this way, all the broadcasting stations are picked up in succession.

*NOTE:*

*The sound of each station is heard for about 5 seconds but depress the TUNING switch if this is not the required station or if you want to search the next station promptly.*

## ⑧ FM SWITCH

Depress this switch for FM reception.

## ⑨ AM SWITCH

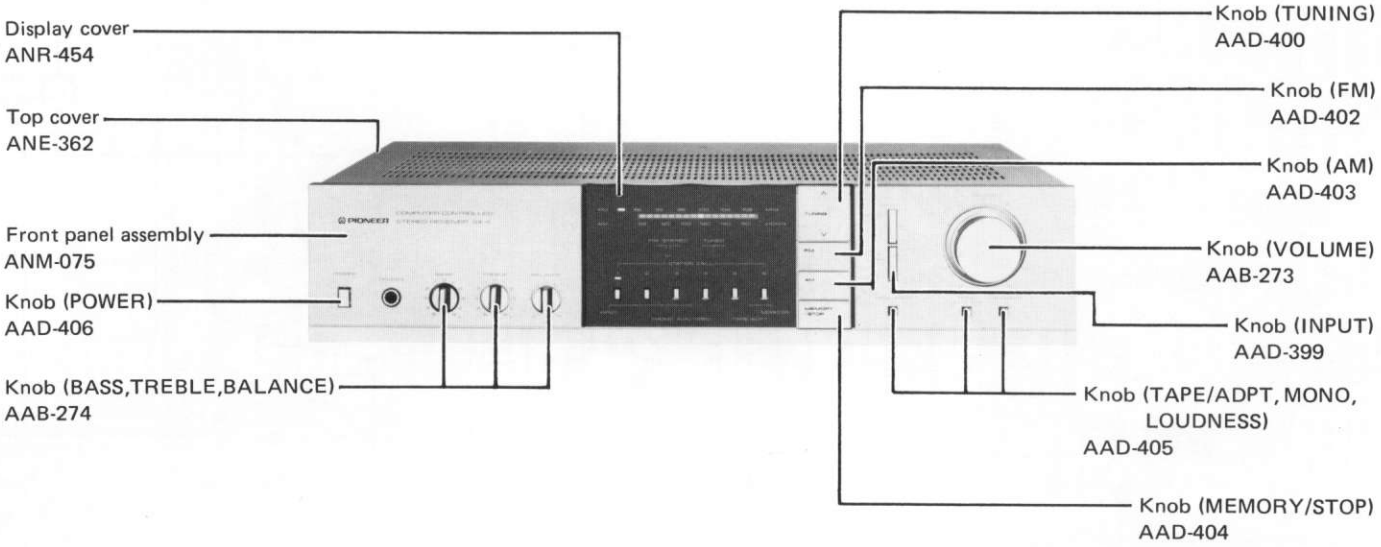
Depress this switch for AM reception.

# 3. PARTS LOCATION

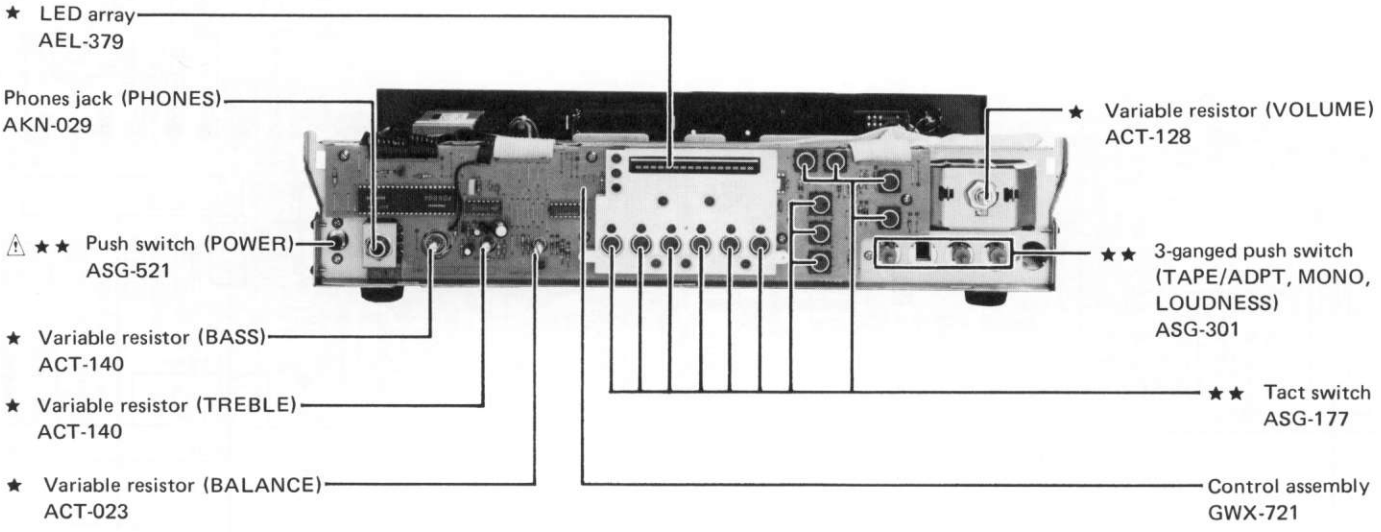
*NOTES:*

- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★ .*
  *★★ GENERALLY MOVES FASTER THAN ★*
  *This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*

## Front Panel View

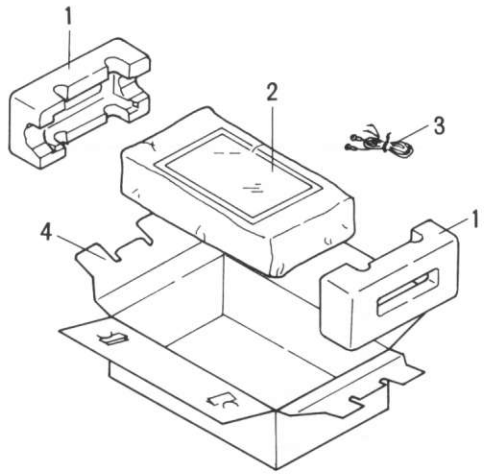



## Front View with Panel Removed

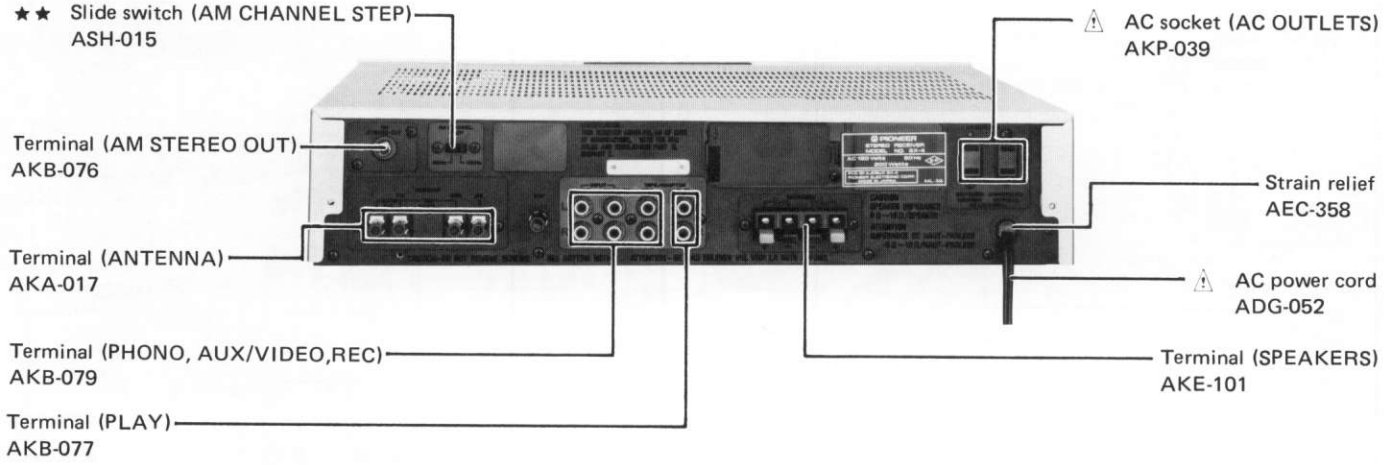


# 4. PACKING

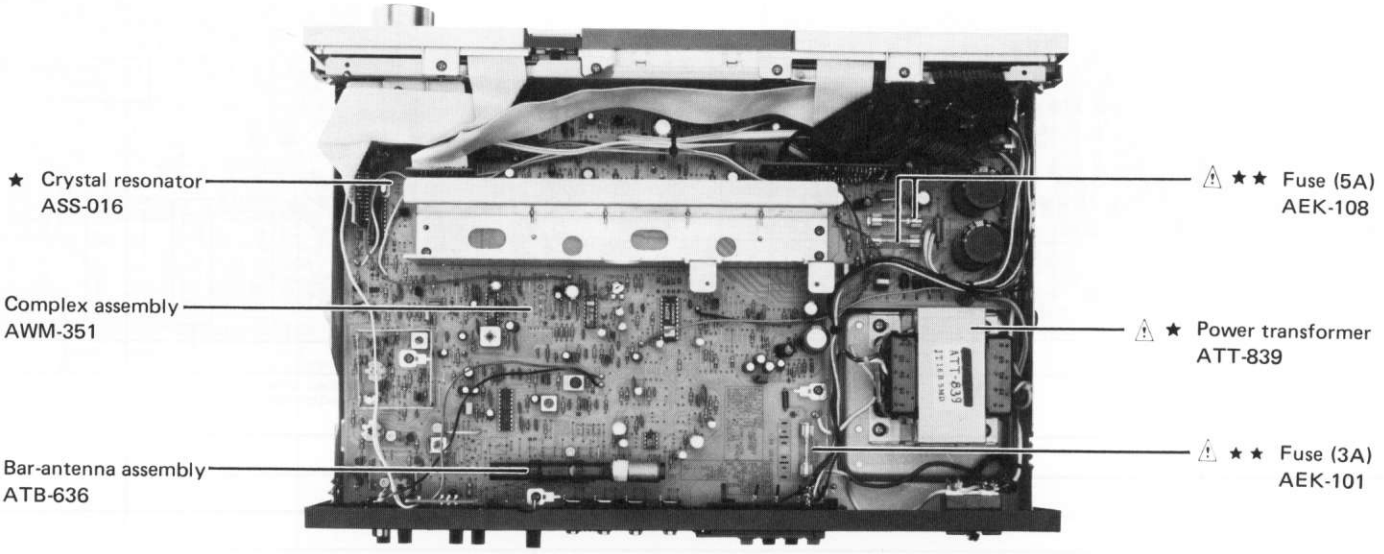
| Mark | No. | Part No. | Description |
|---|---|---|---|
| | 1. | AHA-294 | Side pad |
| | 2. | ARB-439 | Operating instructions |
| | 3. | ADH-004 | T-type FM antenna |
| | 4. | AHD-961 | Packing case |



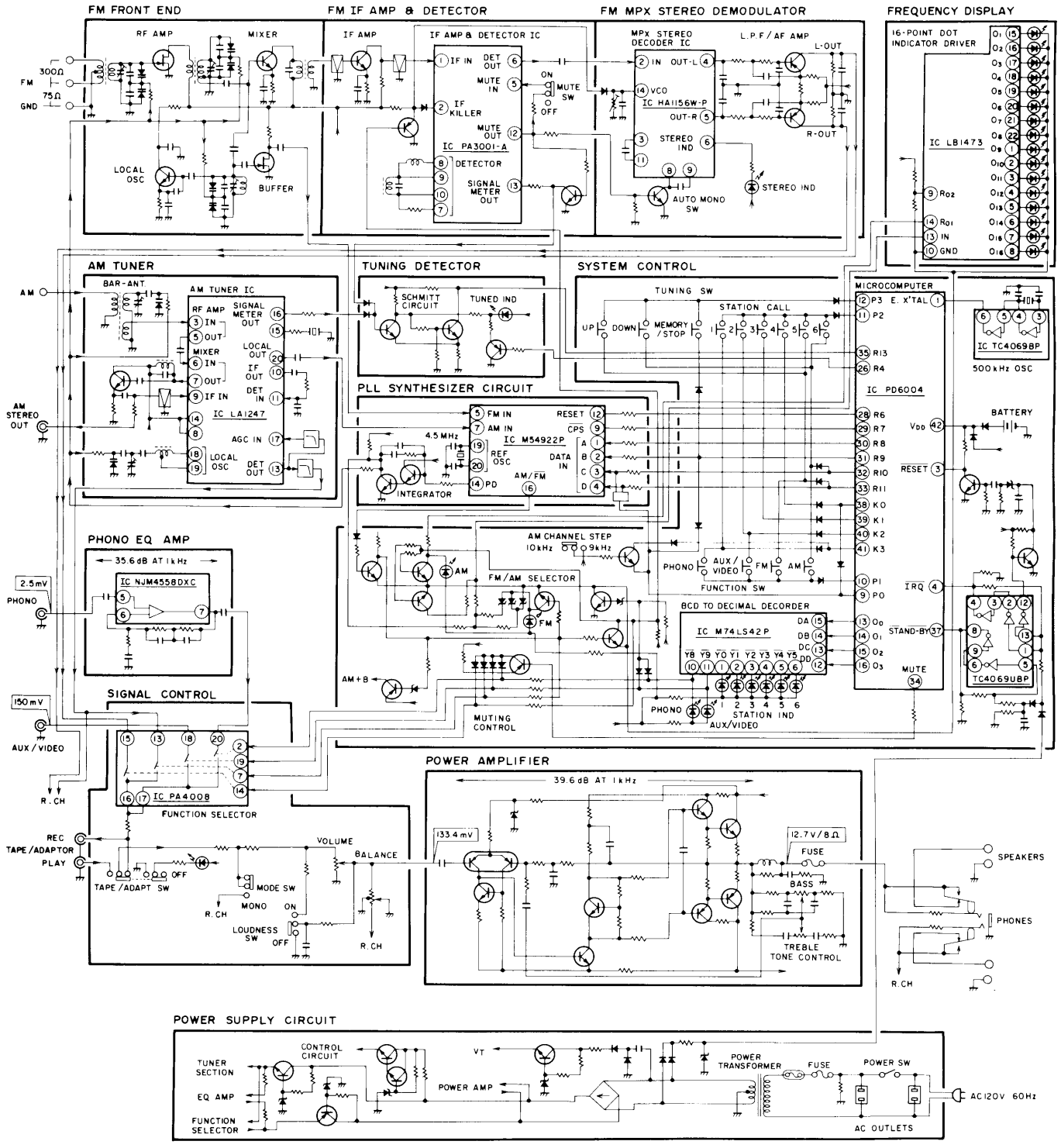

## Rear Panel View



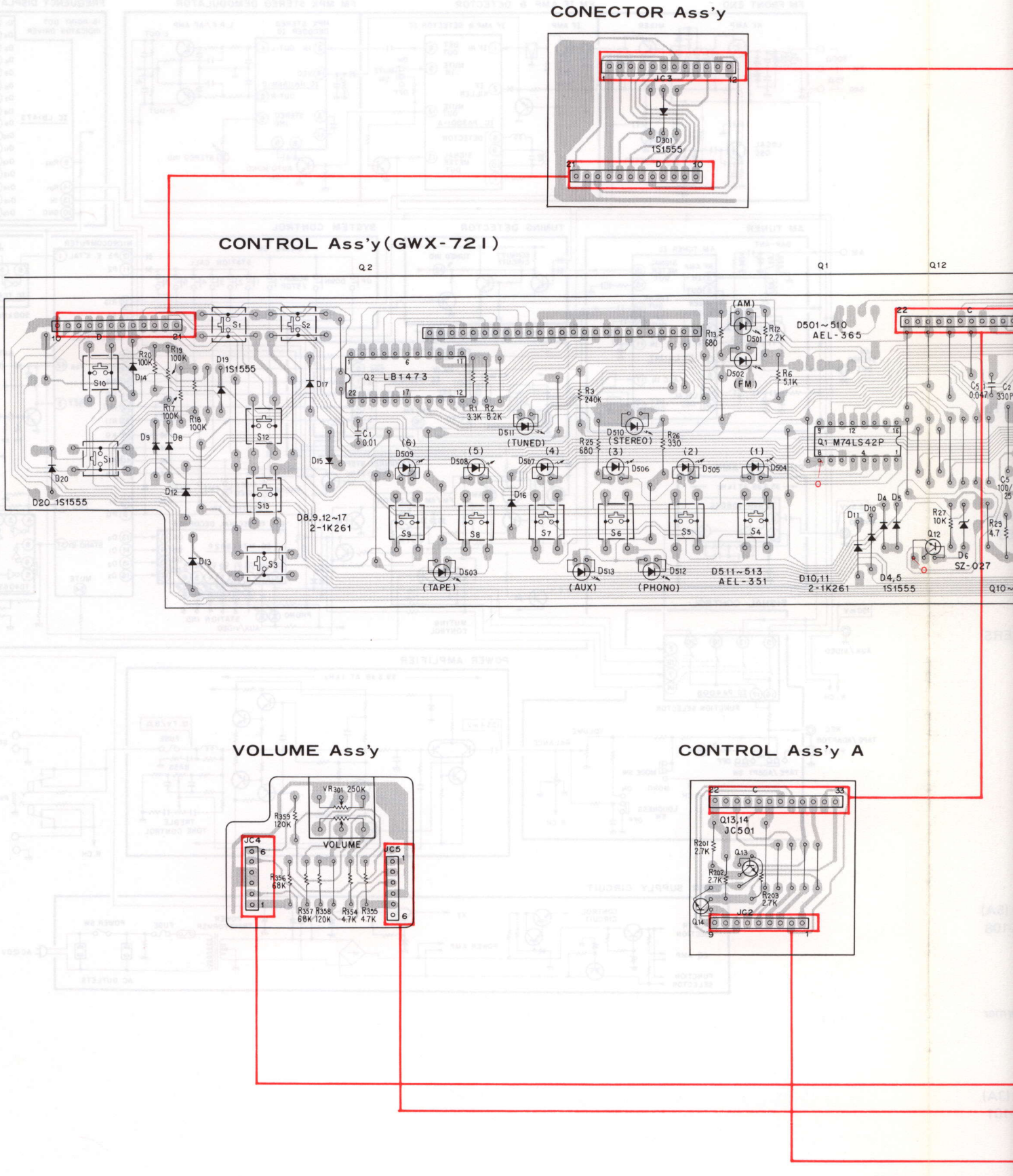

## Top View



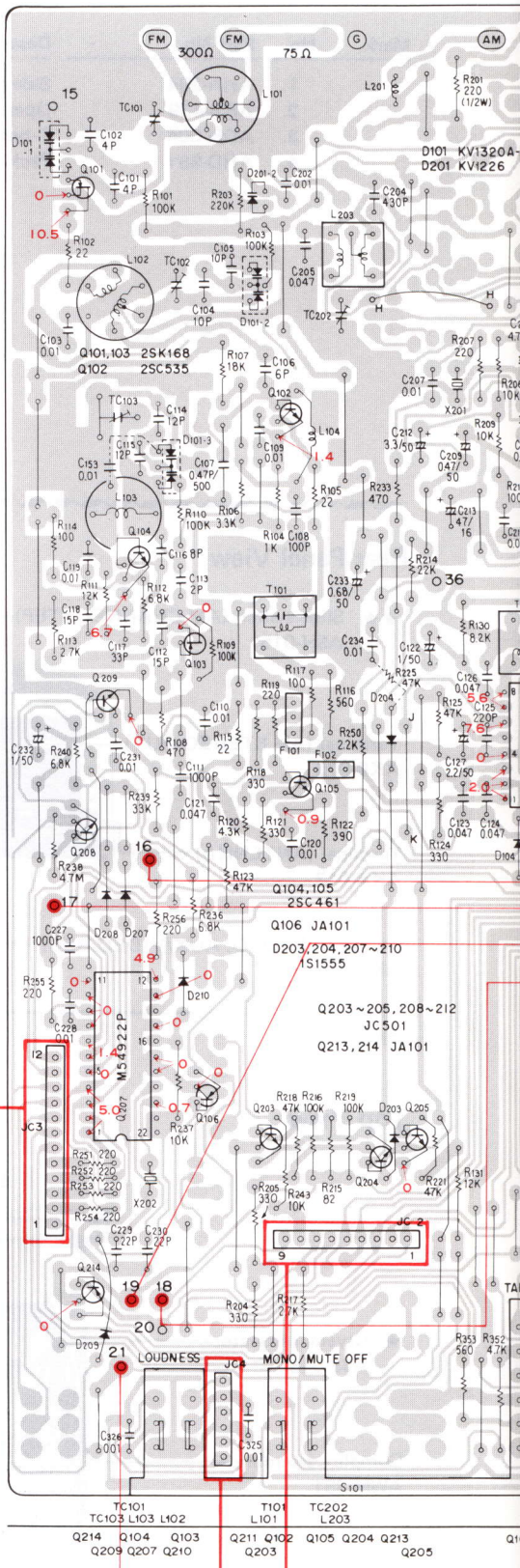
# 5. BLOCK DIAGRAM

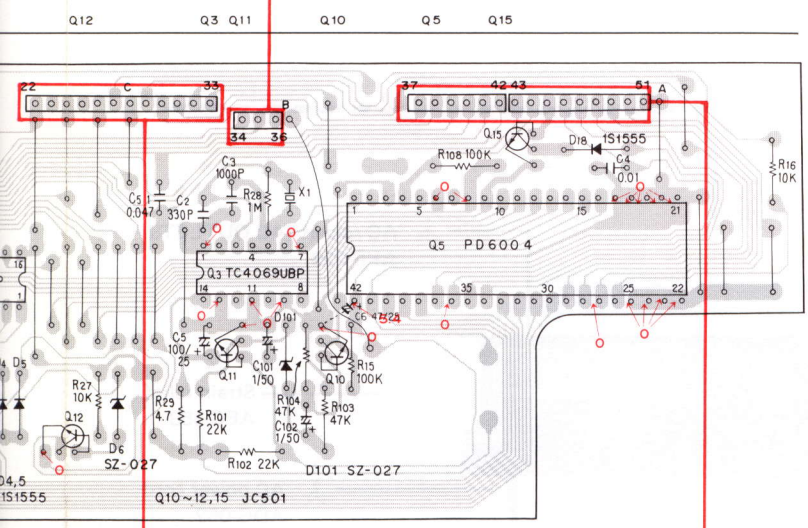


# 6. P.C.BOARDS CONNECTION DIAGRAM

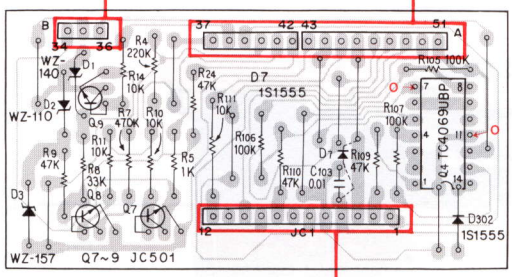


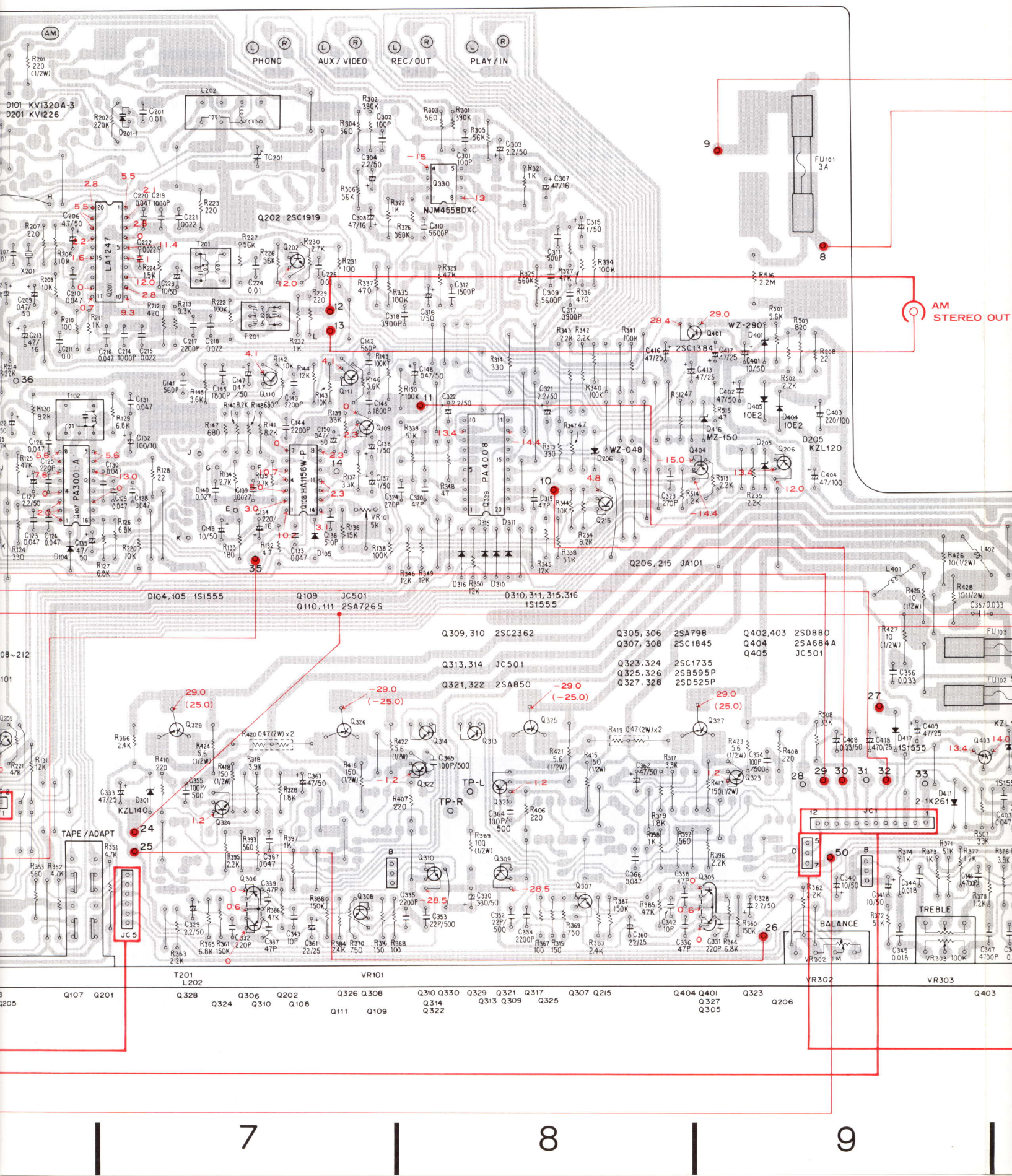
## COMPLEX Ass'y




## CONTROL Ass'y B (GWX-717)




7
8
9
PHONO
AUX / VIDEO
REC / OUT
PLAY / IN
D101 KV1320A-3
D201 KV1226
Q202 2SC1919
NJM4558DXC
LA1247
PA3001-A
PA4008
HA1156W-P
WZ-290
2SC1384
WZ-048
MZ-150
D205 KZL120
FU101 3A
AM STEREO OUT
D104,105 1S1555
Q109 JC501
Q110,111 2SA726S
D310,311,315,316 1S1555
Q206,215 JA101
Q309,310 2SC2362
Q313,314 JC501
Q321,322 2SA850
Q305,306 2SA798
Q307,308 2SC1845
Q323,324 2SC1735
Q325,326 2SB595P
Q327,328 2SD525P
Q402,403 2SD880
Q404 2SA684A
Q405 JC501
TAPE / ADAPT
TP-L
TP-R
BALANCE
TREBLE
JC1
JC5
T201
L202
VR101
VR302
VR303
Q107 Q201
Q328
Q306 Q324
Q202 Q310
Q108
Q326 Q308
Q111 Q109
Q310 Q330 Q314 Q322
Q329 Q321 Q313 Q309
Q317 Q325
Q307 Q215
Q404 Q401 Q327 Q305
Q323
Q206
Q403

A

B

C

D

AM
STEREO OUT

T101: POWER TRANSFORMER

T101

OR
BLK
OR
WHT
BRN

S103: POWER

C101 0.01/AC125V

S103

SWITCHED 100W

UNSWITCHED 100W

AC120V 60Hz

SUM3×2

HEADPHONES JACK Ass'y

R430 330 (1/2W)
R429 330 (1/2W)
HEADPHONES
A
46 47 48 49

L R
SPEAKERS OUT
12.6V/8Ω

SWITCH Ass'y

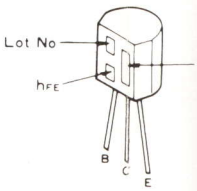
AM CHANNEL STEP
S102
9 kHz 10 kHz

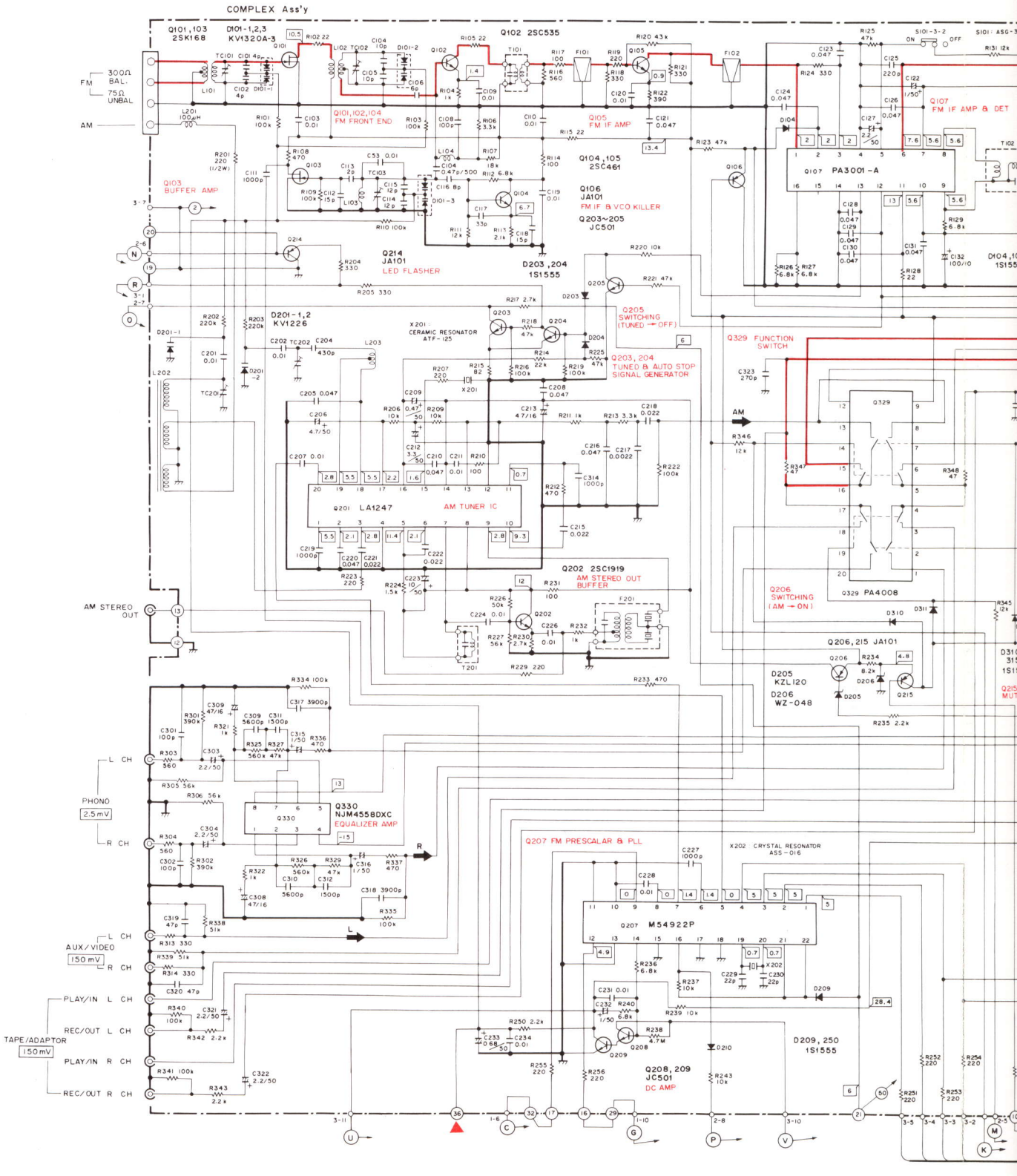
R426 10 (1/2W)
L402
R428 10 (1/2W)
C357 0.033
D414 D415 D412 D413
D412~415 GP-20D
C412 0.01
D407
D408
D407, 408 1S2471
C414 4700/35
C406 0.047
FU103 5A
FU102 5A
R511 62 (2W)
KZL140
Q403
D403
R509 680
C410 220/35
R510 1K
KZL056
D409
C411 4700/35
R506 10K
1S1555
KZL072
D402
D410
Q402
C407 0.047
C405 47/25
R504 1.5K
R505 150 (2W)
Q405
R507 33K
R377 1.2K
R376 3.9K
R382 150K
R375 3.9K
R381 150K
C346 4700P
R378 1.2K
C348 0.1
R379 13K
C350 0.027
BASS
R380 13K
C351 0.027
C347 4700P
C349 0.1
VR304 100K
13.4
14.0
7.2
6.0
VR304
Q403
Q402 Q405

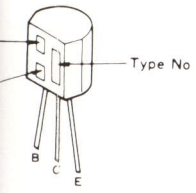
# 7. SCHEMATIC DIAGRAM

*NOTE:*
*The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.*

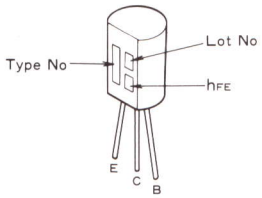
**2SC1919**
**2SC710**
**2SA726S**



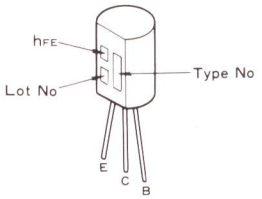





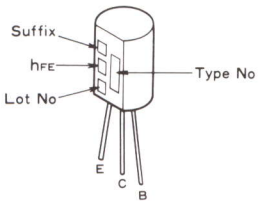

**2SC1845**
**2SB560**
**2SA992**

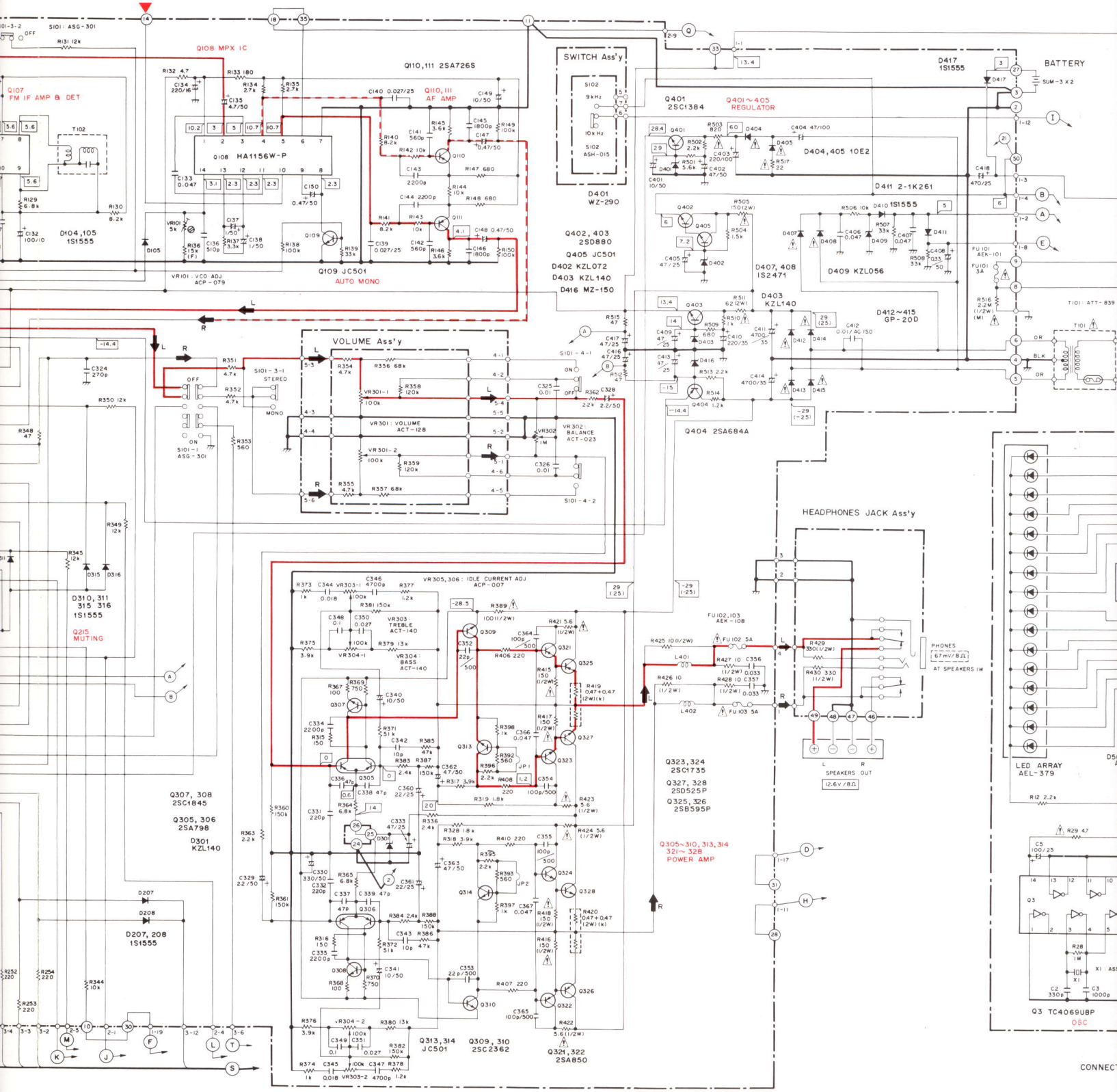



**2SC1384**



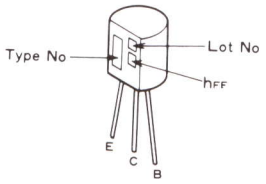

**2SA684A**



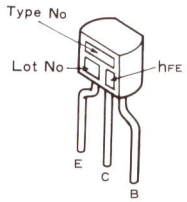



**2SC2240**

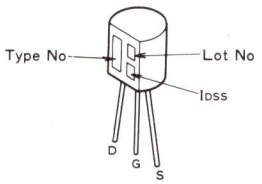
Type No




**2SC2603/A/**
**2SA1115/A/**




**2SK61**




**2SA798**

SWITCHES:

| | | | |
|---|---|---|---|
| S1 | TUNING (UP) | ON — OFF | |
| S2 | TUNING (DOWN) | ON — OFF | |
| S3 | MEMORY/STOP | ON — OFF | |
| S4 | STATION CALL 1 | ON — OFF | |
| S5 | STATION CALL 2 | ON — OFF | |
| S6 | STATION CALL 3 | ON — OFF | |
| S7 | STATION CALL 4 | ON — OFF | |
| S8 | STATION CALL 5 | ON — OFF | |
| S9 | STATION CALL 6 | ON — OFF | |
| S10 | INPUT (PHONO) | ON — OFF | |
| S11 | INPUT (AUX/VIDEO) | ON — OFF | |
| S12 | FM | ON — OFF | |
| S13 | AM | ON — OFF | |

| | | |
|---|---|---|
| S101-1 | TAPE/ADAPT | ON — OFF |
| S101-3 | MONO/MUTE OFF | STEREO/ON - MONO/OFF |
| S101-4 | LOUDNESS | ON — OFF |
| S102 | AM CHANNEL STEP | 9kHz - 10kHz |
| S103 | POWER | ON — OFF |

The underlined indicates the switch position.

1. RESISTORS:
Indicated in Ω, ¼W, 1/8 W ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10%, (M) : ±20% tolerance

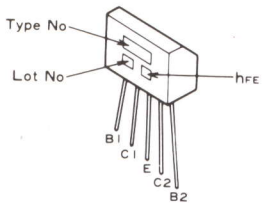
2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
: Signal voltage at 20 W + 20 W 8Ω output (1kHz)
: DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.

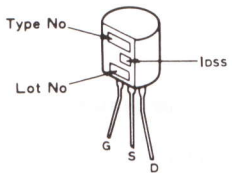
4. OTHERS:
➡ : Signal route.
⊘ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

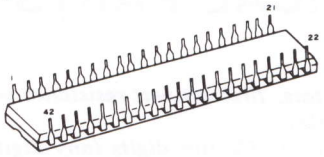
**2SA798**



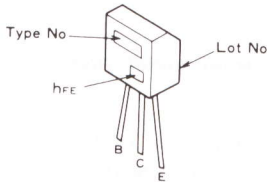

**2SK168**



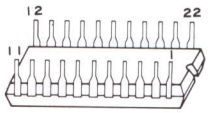

**PD6004**



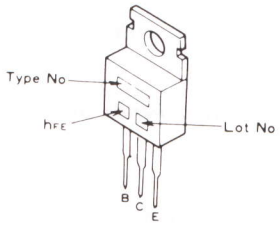

**2SC535**
**2SC461**



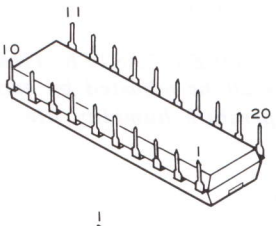

**LB1473**
**M54922P**



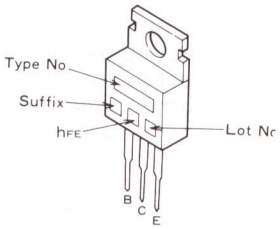

**2SD313**
**2SD880**



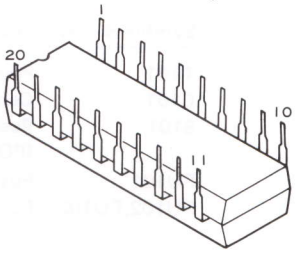

**LA1247**



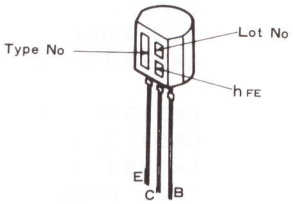

**2SB595P**
**2SD525P**



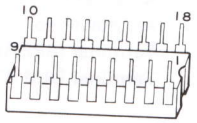

**PA4008**



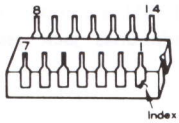

**2SC2362**



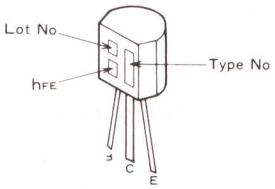

**PA0001**



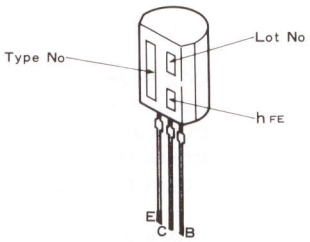

**HA1156W-P**
**TC4069UBP**



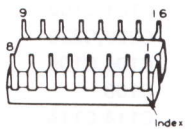

**2SA850**
**2SC1735**



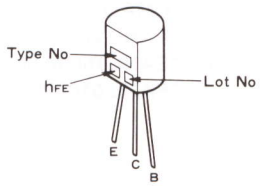

**2SD438**



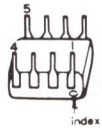

**PA3001-A**
**M74LS42P**

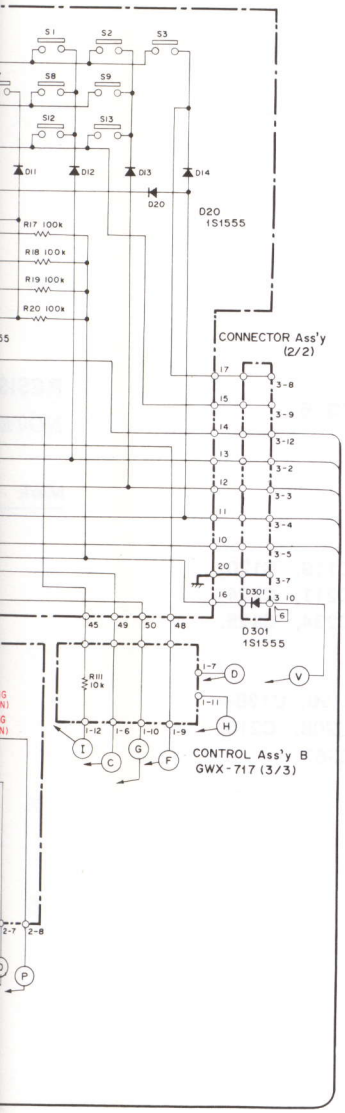



**JA101**
**JC501**




**NJM4558DXC**



# 8. ELECTRICAL PARTS LIST

*NOTES:*

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

  *Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).*

  | | | | | |
  |---|---|---|---|---|
  | *560Ω* | *56 × 10¹* | *561* | *RD¼PS* 5 6 1 | *J* |
  | *47kΩ* | *47 × 10³* | *473* | *RD¼PS* 4 7 3 | *J* |
  | *0.5Ω* | *0R5* | | *RN2H* 0 R 5 | *K* |
  | *1Ω* | *010* | | *RS1P* 0 1 0 | *K* |

  *Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).*

  | | | | | |
  |---|---|---|---|---|
  | *5.62kΩ* | *562 × 10¹* | *5621* | *RN¼SR* 5 6 2 1 | *F* |

- *The ! mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★*

  *★★ GENERALLY MOVES FASTER THAN ★*

  *This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*

## Miscellaneous Parts

| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| ! ★ | ATT-839 | T101 | Power transformer |
| ! | ACG-017 | C101 | Ceramic capacitor |
| ! ★★ | ASG-521 | S101 | Push switch (POWER) |
| ! ★★ | AEK-101 | FU101 | Fuse (3A) |
| ! ★★ | AEK-108 | FU102,FU103 | Fuse (5A) |
| | AEL-379 | D101 | LED array |
| ! | AKP-039 | AC socket (AC OUTLETS) | |
| ! | ADG-052 | AC power cord | |
| | AKE-101 | Terminal (SPEAKERS) | |
| | AKB-076 | Terminal (AM STEREO OUT) | |
| | GWX-721 | Control assembly | |
| | GWX-717 | Control assembly B | |
| | AWM-351 | Complex assembly | |

* The complex assembly (AWM-351) is composed of Complex assembly, Volume assembly, Headphones jack assembly and switch assembly.

## Complex Assembly

### CAPACITORS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | CCDUJ 040C 50 | C101,C102 |
| | CCDCH 220J 50 | C229,C230 |
| | CCDTH 100D 50 | C104,C105 |
| | CCDSL 060D 50 | C106 |
| | CCDTH 120J 50 | C114,C115 |
| | CCDCH 020C 50 | C113 |
| | CCDCH 080D 50 | C116 |
| | CCDCH 150J 50 | C112,C118 |
| | CCDCH 330J 50 | C117 |
| | CCDSL 101J 50 | C108,C310,C302 |
| | CCDSL 221J 50 | C125,C331,C332 |
| | CCDSL 100D 50 | C342,C343 |
| | CCDSL 101K 500 | C354,C355,C364,C365 |
| | CCDSL 220K 500 | C352,C353 |
| | CKDYB 472K 50 | C346,C347 |
| | CCDSL 271J 50 | C323,C324 |
| | CKDYX 273M 25 | C139,C140 |
| | CKDYB 561K 50 | C141,C142 |
| | CKDYB 182K 50 | C145,C146 |
| | CKDYB 222K 50 | C143,C144,C217,C334,C335 |
| | CKDYB 392K 50 | C317,C318 |
| | CKDYF 223Z 50 | C215,C218,C221,C222 |
| | CKDYB 102K 50 | C111,C214,C219,C227 |
| | CCDSL 470J 50 | C319,C320,C336–C339 |
| | CKDYF 103Z 50 | C103, C109, C110, C119, C120, C201, C202, C207, C211, C224, C226, C228, C231, C234, C325, C326, C153 |
| | CKDYF 473Z 50 | C121, C123, C124, C126, C128–C131, C133, C205, C208, C210, C216, C220, C366, C367 |
| | CQMA 473K 50 | C406,C407 |
| | CKDYB 152K 50 | C311,C312 |
| | CKDYB 562K 50 | C309,C310 |
| | CGB R47K 500 | C107 |
| | CQSA 511J 50 | C136 |
| | CQSA 431J 50 | C204 |
| | CQMA 183K 50 | C344,C345 |
| | CQMA 104K 50 | C348,C349 |
| | CQMA 273K 50 | C350,C351 |
| | CQMA 333K 50 | C356,C357 |
| | CEANL 2R2M 50 | C303,C304 |
| | CEANL R47M 50 | C150 |
| | CEANL 010M 50 | C137,C138,C315,C316 |

| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| | CEANL 2R2M 50 | C321,C322,C328,C329 | |
| | CEANL 100M 50 | C340,C341 | |
| | CEANL 470M 16 | C307,C308 | |
| | CEANL 4R7M 50 | C135 | |
| | CEA 471M 25L | C418 | |
| | CEA R33M 50L | C408 | |
| | CEA R68M 50L | C233 | |
| | CEA R47M 50L | C147,C148,C209 | |
| | CEA 010M 50L | C122,C232 | |
| | CEA 2R2M 50L | C127 | |
| | CEA 4R7M 50L | C206 | |
| | CEA 100M 50L | C149,C223,C401 | |
| | CEA 3R3M 50L | C212 | |
| | CEA 220M 25L | C360,C361 | |
| | CEA 470M 25L | C333,C405,C409,C413,C416,C417 | |
| | CEA 470M 50L | C362,C363,C402 | |
| | CEA 101M 10L | C132 | |
| | CEA 221M 35L | C410 | |
| | CEA 221M 16L | C134 | |
| | CEA 331M 50L | C330 | |
| | CEA 470M 16L | C213 | |
| | CEA 221M 100L | C403 | |
| | CEA 470M 100L | C404 | |
| | ACH-217 | C411,C414 | Electrolytic (4700/35V) |
| | ACG-019 | C412 | Ceramic (0.01/AC150V) |
| | ACM-014 | TC101,TC102 | FM ceramic trimmer |
| | ACM-006 | TC103 | Ceramic trimmer |
| | ACM-015 | TC201,TC202 | AM ceramic trimmer |

## RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| | RD¼PM □□□J | R101–R135, R137–R150, R202–R207, R209–R227, R229, R230, R232–R240, R243, R250, R255, R256, R301–R306, R313–R319, R321, R322, R325–R329, R334–R353, R360–R388, R392, R393, R395–R398, R406–R408, R410, R431, R501, R502, R504, R506–R510, R512–R515 | |
| | RS2P □□□J | R505,R511 | |
| | RN¼PQ □□□□F | R136 | |
| | RD½PSF □□J□J | R389,R415–R418,R421–R424 | |
| | RD½PS □□□J | R425–R428,R201 | |
| | PD¼PMF □□□J | R503,R517 | |
| | RD1/8PM □□□J | R251–R254 | |
| | ACN-118 | R419,R420 | Wire wound (0.47/2W X2) |
| | ACN-029 | R516 | Carbon composition (2.2M/½W) |
| ★ | ACP-079 | VR101 | Semifixed (2k-B) |
| ★ | ACT-023 | VR302 | Variable (BALANCE) |
| ★ | ACT-140 | VR303,VR304 | Variable (TREBLE, BASS) |

## TRANSFORMERS,COILS AND FILTERS

| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| | ATE-039 | T101 | FM IF transformer |
| | ATE-052 | T102 | FM det. transformer |
| | ATC-112 | L101 | FM antenna coil |
| | ATC-131 | L102 | FM RF coil |
| | ATC-115 | L103 | FM osc. coil |
| | ATH-049 | L104 | RF choke coil |
| | T24-030 | L201 | Inductor |
| | ATB-636 | L202 | Bar-antenna assembly |
| | ATB-067 | L203 | AM osc. coil |
| | ATB-069 | T201 | AM IF coil |
| | ATH-028 | L401,L402 | AF choke coil |
| | ATF-126 | F101,F102 | FM ceramic filter |
| | ATF-121 | F201 | AM ceramic filter |

## SEMICONDUCTORS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★★ | LA1247 | Q201 |
| ★★ | M54922P | Q207 |
| ★★ | PA3001-A | Q107 |
| ★★ | HA1156W-P | Q108 |
| ★★ | PA4008 (PA0001) | Q329 |
| ★★ | NJM4558DXC (NJM4558DX) | Q330 |
| ★★ | 2SC1919 (2SC1845) | Q202 |
| ★★ | JC501 (2SC2603/A/) | Q109, Q203–Q205, Q208, Q209, Q313, Q314, Q405 |
| ★★ | 2SC1384 (2SD438) | Q401 |
| ★★ | 2SC1845 (2SC2240) | Q307,Q308 |
| | 2SC535 | Q102 |
| ★★ | 2SC461 (2SC710) | Q104,Q105 |
| ★★ | 2SD880 (2SD313) | Q402,Q403 |
| ★★ | 2SC2362 (2SC2240) | Q309,Q310 |
| ★★ | 2SA850-D* (2SA850-C*) (2SB560-D*) (2SB560-E*) | Q321,Q322 |
| ★★ | 2SC1735-D* (2SC1735-C*) (2SD438-D*) (2SD438-E*) | Q323,Q324 |

*hfe of Q321-Q324 should have the same value.

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★★ | 2SB595P-Y** (2SB595P-O**) (2SB595P-R**) | Q325,Q326 |
| ★★ | 2SD525P-Y** (2SD525P-O**) (2SD525P-R**) | Q327,Q328 |

** hfe of Q325–Q328 should have the same value.

| | | |
|---|---|---|
| ★★ | 2SA798 | Q305,Q306 |
| ★★ | 2SA726S (2SA992) | Q110,Q111 |
| ★★ | 2SA684A (2SB560) | Q404 |
| ★★ | JA101 (2SA1115/A/) | Q106,Q206,Q214,Q215 |
| ★★ | 2SK168 (2SK61-GR) | Q101,Q103 |
| ★ | WZ-048 (MZ-047) | D206 |
| ★ | KZL120 | D205 |
| ★ | KZL072 | D402 |
| ★ | KZL140 | D301,D403 |
| ★ | WZ-290 | D401 |
| ★ | MZ-150 (WZ-150) | D416 |
| ★ | KZL056 | D409 |
| ★ | 1S2471 | D407,D408 |
| ★ | 1S1555 (1S2473) | D104, D105, D203, D204, D207–D210, D310, D311, D315, D316, D410, D417 |
| ★ | GP-20D | D412–D415 |
| ★ | 10E2 (SIB01–02) | D404,D405 |
| ★ | KV1320A-3 | D101 |
| ★ | KV1226-Y | D201 |
| ★ | 2-1K261 | D411 |

* KV1320A-3 consists of three twin vari-cap diodes with the indentical characteristics.
* KV1226-Y consists of two vari-cap diodes with the indentical characteristics.

### OTHERS

| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| ★★ | ASG-301 | S101 | Push switch |
| ★ | ATF-125 | X201 | Ceramic resonator |
| ★ | ASS-016 | X202 | Crystal resonator |
| | AKA-017 | Terminal (ANTENNA) | |
| | AKB-077 | Terminal (PLAY) | |
| | AKB-079 | Terminal (PHONO, AUX/VIDEO, REC) | |
| | AEC-841 | Insulator | |
| | PBZ30P060FMC | Screw (3×6) | |
| | VBZ30P060FMC | Screw (3×6) | |
| | ABA-258 | Screw | |
| | AKH-005 | Spacer | |

## Switch Assembly

| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| ★★ | ASH-015 | S102 | Slide switch (AM CHANNEL STEP) |

## Volume Assembly

### RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| ★ | ACT-128 | VR301 | Variable (VOLUME) |
| | RD¼PM □□□J | R354–R359 | |

## Headphones Jack Assembly

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | AKN-029 | Phones jack (PHONES) |
| | RD½PS 331J | R429,R430 |

## Control Assembly A

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | RD¼PM 272J | R201–R203 |
| ★★ | JC501 (2SC2603/A/) | Q13,Q14 |

## Control Assembly B (GWX-717)

### CAPACITORS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | CKDYF 103Z 50 | C103 |

### RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | RD¼PM □□□J | R4, R5, R7, R8–R11, R14, R24, R105–R107, R109–R111 |

### SEMICONDUCTORS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★★ | TC4069UBP | Q4 |
| ★★ | JC501 (2SC2603/A/) | Q7–Q9 |
| ★ | WZ-140 (MZ-140) | D1 |
| ★ | WZ-110 (MZ-110) | D2 |
| ★ | WZ-157 (MZ-157) | D3 |
| ★ | 1S1555 (1S2473) | D7,D302 |

## Connector Assembly

| Mark | Part No. | Symbol & Description |
|---|---|---|
| ★ | 1S1555<br>(1S2473) | D301 |

## Control Assembly (GWX-721)

### CAPACITORS

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | CKDYF 103Z 50 | C1,C4 |
| | CKDYB 331K 50 | C2 |
| | CKDYB 102K 50 | C3 |
| | CEA 101M 25L | C5 |
| | CEA 010M 50L | C101,C102 |
| | CEA 470M 25L | C6 |
| | CKDYF 473Z 50 | C501 |

### RESISTORS

*NOTE: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.*

| Mark | Part No. | Symbol & Description |
|---|---|---|
| | RD¼PM □□□J | R1–R3, R6, R12, R13, R15–R20, R25–R28, R101–R104, R108 |
| ! | RD¼PMF □□□J | R29 |

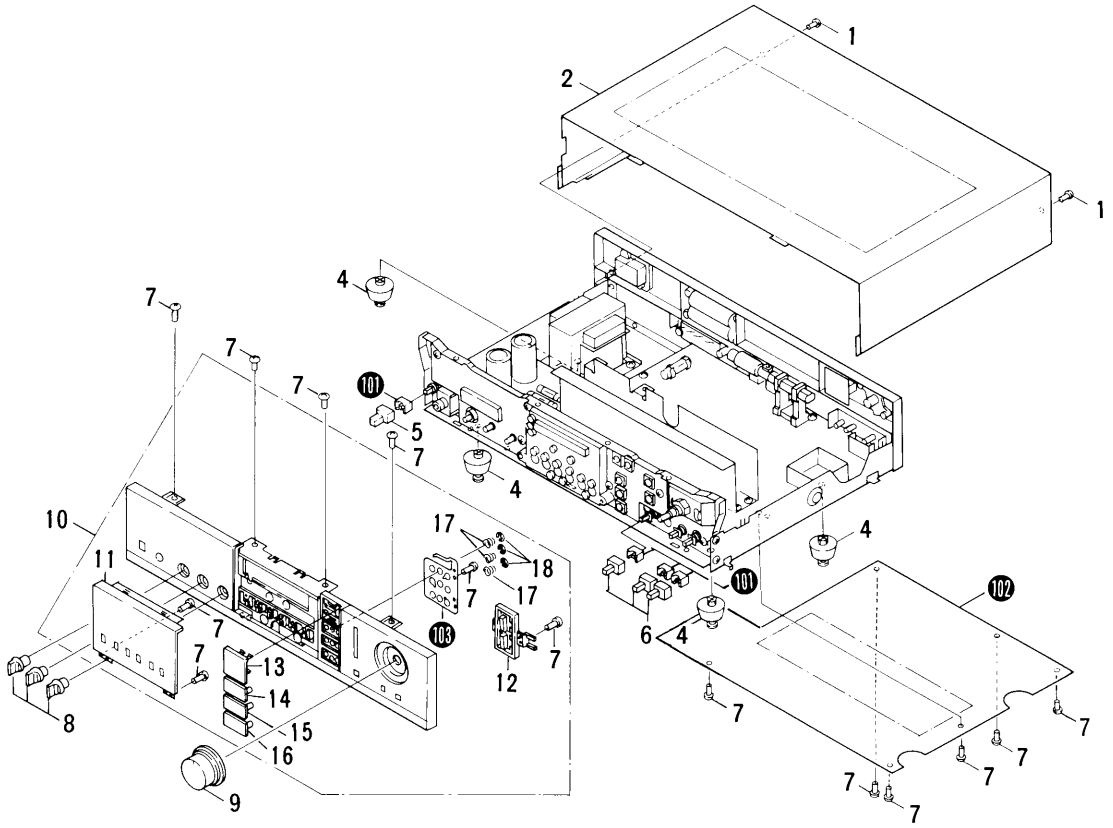
### SEMICONDUCTORS

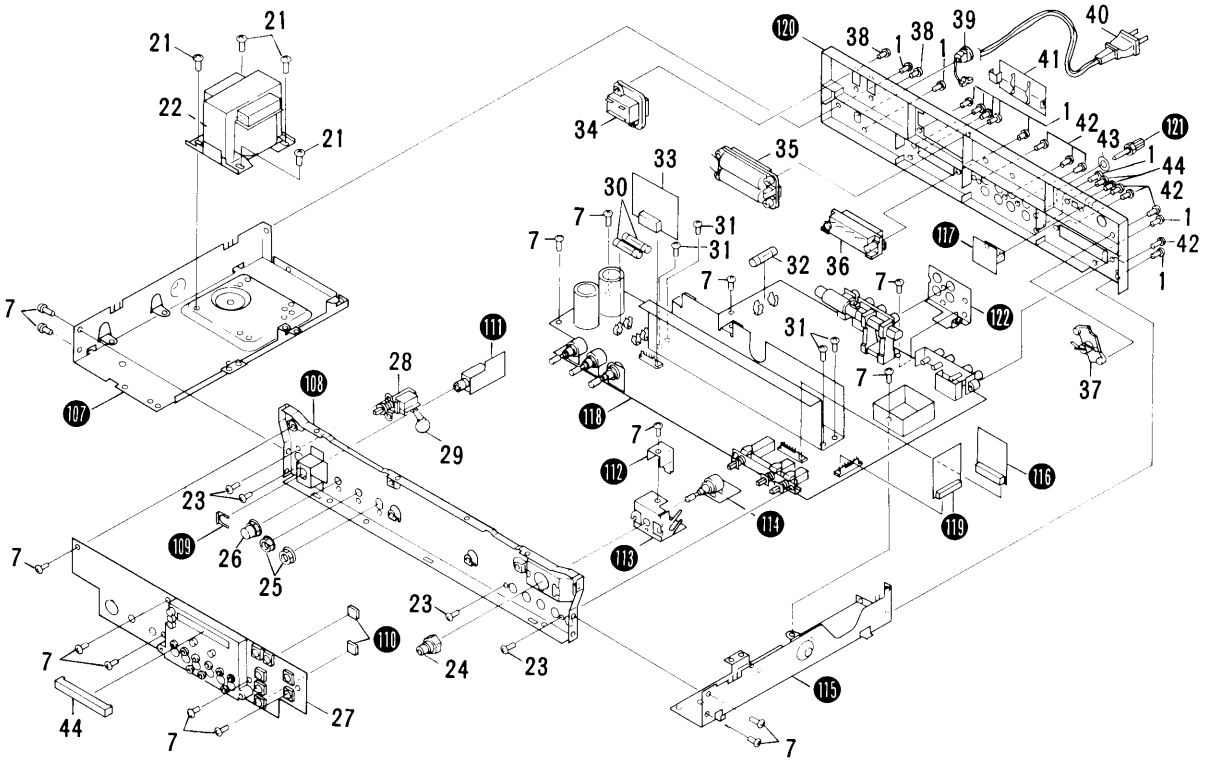
| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| ★★ | M74LS42P | Q1 | |
| ★★ | LB1473 | Q2 | |
| ★★ | TC4069UBP | Q3 | |
| ★★ | PD6004 | Q5 | |
| ★★ | JC501<br>(2SC2603/A/) | Q10–Q12,Q15 | |
| ★ | 1S1555<br>(1S2473) | D4,D5,D18–D20 | |
| ★ | 2-1K261 | D8–D17 | |
| ★ | SZ-027 | D6,D101 | |
| ★ | AEL-365 | D501–D510 | LED (Red) |
| ★ | AEL-351 | D511–D513 | LED (Green) |

### OTHERS

| Mark | Part No. | Symbol & Description | |
|---|---|---|---|
| ★★ | ASG-177 | S1–S13 | Tact switch |
| ★ | ASS-017 | X1 | Ceramic resonator |
| | PBZ25P100FMC | | Screw 2.5X10 |

# 9. EXPLODED VIEW





## Parts List

*NOTES:*

- *Parts without part number cannot be supplied.*
- *The ! mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★ .*
  ★★ *GENERALLY MOVES FASTER THAN* ★
  *This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*

| Mark | No. | Part No. | Description |
|---|---|---|---|
| | 1. | BBT30P100FZK | Screw 3X10 |
| | 2. | ANE-362 | Top cover |
| | 3. | . . . . . | |
| | 4. | AEC-838 | Foot assembly |
| | 5. | AAD-406 | Knob (POWER) |
| | 6 | AAD-405 | Knob |
| | 7. | VBZ30P060FMC | Screw 3X6 |
| | 8. | AAB-274 | Knob (BASS,TREBLE, BALANCE) |
| | 9. | AAB-273 | Knob (VOLUME) |
| | 10. | ANM-075 | Front panel assembly |
| | 11. | ANR-454 | Display cover |
| | 12. | AAD-399 | Knob (INPUT) |
| | 13. | AAD-400 | Knob (TUNING) |
| | 14. | AAD-402 | Knob (FM) |
| | 15. | AAD-403 | Knob (AM) |
| | 16. | AAD-404 | Knob (MEMORY/STOP) |
| | 17. | ABH-088 | Coiled spring |
| | 18. | ABE-072 | CS-type washer |
| | 19. | . . . . . | |
| | 20. | . . . . . | |
| | 21. | VTZ40P080FMC | Screw 4X8 |
| ! ★ | 22. | ATT-839 | Power transformer |
| | 23. | VMZ30P060FMC | Screw 3X6 |
| | 24. | ABN-047 | Union nut |
| | 25. | NK90FMC | Nut M9 |
| | 26. | ABN-028 | Nut |
| | 27. | GWX-721 | Control assembly |
| ! ★★ | 28. | ASG-521 | Push switch (POWER) |
| ! | 29. | ACG-017 | Ceramic capacitor |
| ! ★★ | 30. | AEK-108 | Fuse (5A, FU102,FU103) |
| | 31. | VBZ30P080FMC | Screw 3X8 |
| ! ★★ | 32. | AEK-101 | Fuse (3A,FU101) |
| | 33. | GWX-717 | Control assembly B |
| ! | 34. | AKP-039 | AC socket (AC OUTPUTS) |
| | 35. | AXC-013 | Battery case |

| Mark | No. | Part No. | Description |
|---|---|---|---|
| | 36. | AKE-101 | Terminal (SPEAKERS) |
| | 37. | AKB-076 | Terminal (AM STEREO OUT) |
| | 38. | MTZ30P100FZK | Screw 3X10 |
| | 39. | AEC-358 | Strain relief |
| ! | 40. | ADG-052 | AC power cord |
| | 41. | ANR-432 | Case cover |
| | 42. | VBZ30P120FZK | Screw 3X12 |
| | 43. | WA35F100N080 | Washer 3.5φ |
| ★ | 44. | AEL-379 | LED array |
| | 45. | | |
| | | AWM-351 | Complex assembly (Nos.111,114,117 and 118) |
| | 101. | | Flexible joint |
| | 102. | | Bottom plate |
| | 103. | | Ground plate |
| | 104. | | . . . . . |
| | 105. | | . . . . . |
| | 106 | | . . . . . |
| | 107 | | Transformer frame |
| | 108. | | Panel stay |
| | 109. | | Stopper |
| | 110. | | Cushion |
| | 111. | | Headphones jack assembly |
| | 112. | | Shield case |
| | 113. | | VR holder |
| | 114. | | Volume assembly |
| | 115. | | Side frame R |
| | 116. | | Control assembly A |
| | 117. | | Switch assembly |
| | 118. | | Complex assembly |
| | 119. | | Connector assembly |
| | 120. | | Rear Panel |
| | 121. | | Terminal (GND) |
| | 122. | | |

# 10. ADJUSTMENTS

### Idle Current Adjustment

1. Without any load or input signal, turn the VOLUME control to the minimum position.
2. Turn the POWER switch ON and let stand for 10 minutes.
3. Check that the voltage (DC) between TP-L (TP-R) terminal (−) on the complex assembly and SPEAKERS + terminal (+) on the rear panel lies within 2.35mV—117.5mV range.
4. If the voltage is less than 2.35mV, cut jumper JP 1(JP 2). If the voltage exceeds 117.5mV, check for circuit failure.

### FM Tuner Adjustment

- Connect the FM signal generator (FM SG) to the FM ANTENNA 300Ω terminal through a 300Ω dummy antenna.
- Set the FM (FUNCTION) switch to the ON position and the MONO/MUTE OFF switch to the MONO/MUTE OFF position.
- Connect between pin 10 and pin 38 of Q5 on the control assembly (GWX-721) for a short period of time. (The test frequencies are stored in memories. This operation is program controlled of the computer.)

(*1) Tune the FM SG to the SX-4.

(*2) Connect the FM multiplex signal generator to the FM SG external modulator terminal. Set the modulation to a Main 1kHz/L+R/±67.5kHz deviation. Pilot 19kHz/±7.5kHz deviation.

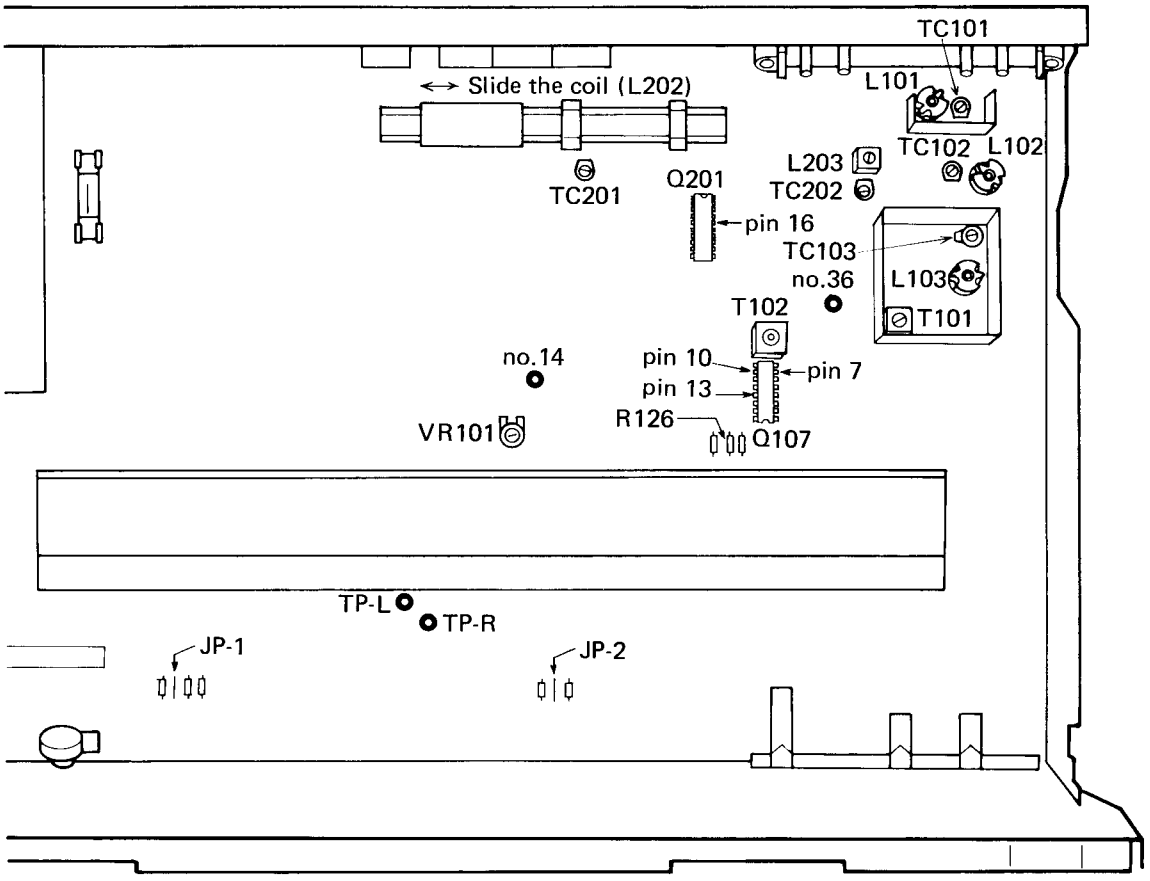
| Step | FM SG (400Hz, ±75kHz deviation) | | SX-4 STATION CALL switch | Adjustment point | Adjustment procedure |
|---|---|---|---|---|---|
| | Frequency | Level | | | |
| 1 | No signal | | Push the 1 | L103 | 7.2V DC between terminal no.36 and ground. |
| 2 | No signal | | Push the 6 | TC103 | 25V DC between terminal no.36 and ground. |
| 3 | Repeat steps 1 and 2 until both specifications are correct. | | | | |
| 4 | 90.0MHz (*1) | 40dB | Push the 3 | L101, L102 | Adjust until DC voltage between pin 13 of Q107 and ground is maximum. |
| 5 | 106.0MHz (*1) | 40dB | Push the 5 | TC101,TC102 | |
| 6 | Repeat steps 4 and 5 until maximum sensitivity is attained. | | | | |
| 7 | 99.0MHz(*1) | 60dB | Push the 4 | T101 | Adjust until DC voltage between pin 13 of Q107 and ground is maximum. |
| 8 | 99.0MHz (*1) | 60dB | Push the 4 | T102 | Adjust until distortion at TAPE REC L or R terminal is minimum. |
| 9 | Set the MONO/MUTE OFF switch to the STEREO/MUTE ON position. | | | | |
| 10 | 99.0MHz(*1) | 60dB (not modulation) | Push the 4 | VR101 | Adjust signal at terminal no.14 to 19kHz (±100Hz). |
| 11 | 99.0MHz (*1) Set to stereo modulation(*2) | 60dB | Push the 4 | T101 (within ±90°) | Adjust until distortion at TAPE REC L or R terminal is minimum. |
| 12 | 99.0MHz(*1) | Variable | Push the 4 | R126 | Confirm that muting operation stops above 36dB - if not, remove R126. |

## AM Tuner Adjustment

- Connect the AM signal generator (AM SG) to the AM ANTENNA terminal through a 10kΩ resistor.
- Set the AM (FUNCTION) switch to the ON position and the AM CHANNEL STEP switch (on the rear panel) to the 9kHz position.
- Connect between pin 10 and pin 38 of Q5 on the control assembly (GWX-721) for a short period of time. (The test frequencies are stored in memories. This operation is program controlled of the computer.)

(*3) Tune the AM SG to the SX-4.

| Step | AM SG (400Hz, 30% modulation) | | SX-4 STATION CALL switch | Adjustment point | Adjustment procedure |
|---|---|---|---|---|---|
| | Frequency | Level | | | |
| 1 | No signal | | Push the 1 | L203 | 2V DC between terminal no.36 and ground. |
| 2 | No signal | | Push the 4 | TC202 | 25V DC between terminal no.36 and ground. |
| 3 | Repeat steps 1 and 2 until both specifications are correct. | | | | |
| 4 | 603kHz(*3) | 40dB | Push the 2 | Bar-antenna (L202) | Adjust until DC voltage between pin 16 of Q201 and ground is maximum. |
| 5 | 1395kHz(*3) | 40dB | Push the 3 | TC201 | |
| 6 | Repeat steps 4 and 5 until maximum sensitivity is attaind. | | | | |
| 7 | Set the AM CHANNEL STEP switch to the 10kHz position. | | | | |



# 10. RÉGLAGE

### Réglage du courant déwatté

1. Sans aucune charge ni signal d'entrée, placer de contrôl VOLUME en position minimum.
2. Placer la commutateur de puissance (POWER) sur ON et la maintenir dix minutes.
3. Vérifier que le voltage (CC) entre la borne (-) TP-gauche (TP-droit) de l'assemblage complexe et les SPEAKERS ainsi que la borne (+) du panneau arrière se situe dans une gamme de 2,35mV, 117,5mV.
4. Si le voltage est de moins de 2,35mV, couper le câble d'interconnexion JP 1 (JP 2). Si le voltage est supérieur 117,5mV, toute possibilité de panne de circuit.

### Réglage du tuner FM

- Raccorde le générateur de signaux FM (FM SG) sur la borne de l'antenne FM (FM ANTENNA) 300Ω par l'intermédiaire d'une antenne factice 300Ω.
- Régler le commutateur FM (FUNCTION) en position ON et le commutateur MONO/MUTE OFF en position MONO/MUTE OFF.
- Raccorder les broche 10 et 38 de Q5 de l'assemblage de contrôle (GWX-721) pendant un court instant. (Les fréquences de contrôle sont gardées en memoire. Le contrôle de cette opération est programmé par l'ordinateur).

(*1) Accorder le générateur de signaux FM sur SX-4.

(*2) Raccorder le générateur de signaux FM steréo multiplex sur la borne du modulateur externe FM SG. Régler la modulation sur déviation principale 1kHz/gauche+droit (L+R)/±67,5kHz, déviation de synchronisation 19kHz/±7,5kHz.

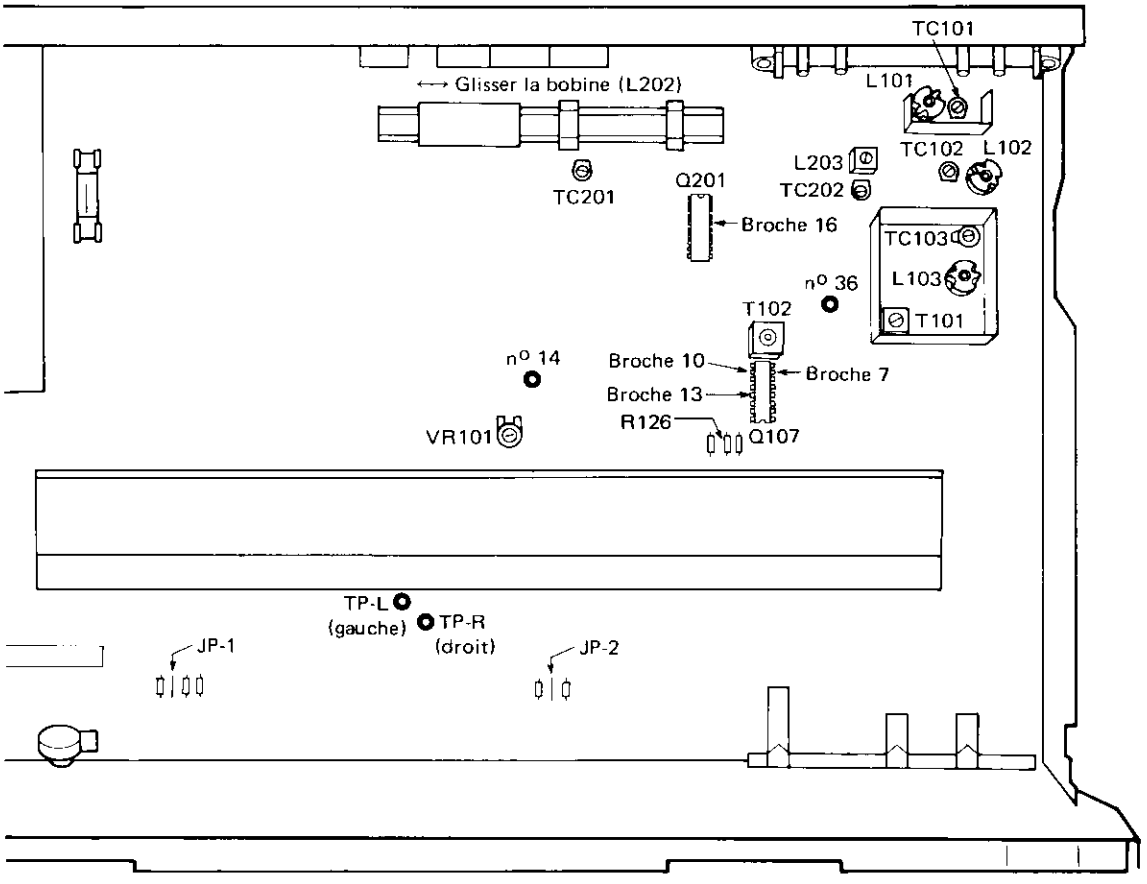
| Phase | FM SG (400Hz, ±75kHz, déviation) | | Commutateur STATION CALL de SX-4 | Point de réglage | Méthode de réglage |
|---|---|---|---|---|---|
| | Fréquence | Niveau | | | |
| 1 | Pas de signal | | Appuyer la touche nº 1 | L103 | 7,2V CC entre la borne nº 36 et la borne de terre. |
| 2 | Pas de signal | | Appuyer la touche nº 6 | TC103 | 25V CC entre la borne nº 36 et la borne de terre. |
| 3 | Répéter les phases 1 et 2 afin d'obtenir les deux caractéristiques correctes. | | | | |
| 4 | 90,0MHz (*1) | 40dB | Appuyer la touche nº 3 | L101,L102 | Régler le voltage en CC entre la broche 13 de Q107 et la terre à son maximum. |
| 5 | 106,0MHz (*1) | 40dB | Appuyer la touche nº 5 | TC101, TC102 | |
| 6 | Répéter les phases 4 et 5 afin d'obtenir la sensibilité maximum. | | | | |
| 7 | 99,0MHz (*1) | 60dB | Appuyer la touche nº 4 | T101 | Régler le voltage en CC entre la broche 13 de Q107 et la terre à son maximum. |
| 8 | 99,0MHz (*1) | 60dB | Appuyer la touche nº 4 | T102 | Régler afin d'obtenir la distorsion minimum à la borne TAPE REC L ou R. |
| 9 | Régler le commutateur MONO/MUTE OF sur la position STEREO/MUTE ON. | | | | |
| 10 | 99,0MHz (*1) | 60dB (pas de modulation) | Appuyer la touche nº 4 | VR101 | Régler le signal à la borne nº 14 sur 19kHz (±100Hz). |
| 11 | 99,0MHz (*1) Régler sur modulation stéréo (*2) | 60dB | Appuyer la touche nº 4 | T101 (entre ±90°) | Régler afin d'obtenir la distorsion minimum à la borne TAPE REC L ou R. |
| 12 | 99,0MHz (*1) | Variable | Appuyer la touche nº 4 | R126 | Vérifier que l'opération de blocage casse au-dessus de 36dB. sinon retirer R126. |

### Réglage du tuner AM

- Raccorder le générateur de signaux AM (AM SG) sur la borne AM d'antenne (AM ANTENNA) par par l'intermédiaire d'un résisteur de 10kΩ.
- Régler le commutateur AM (FUNCTION) sur la position ON et le commutateur AM CHANNEL STEP (situé sur le panneau arrière) sur la position 9kHz.
- Raccorder les broche 10 et 38 de Q5 sur l'assemblage de contrôle (GWX-721) pendant un court instant. (Les fréquences de contrôle sont gardées en mémoire. Le contrôle de cette opération est programmé par l'ordinateur.)

(*3) Accorder le générateur de signaux AM SG sur SX-4.

| Phase | AM SG (400Hz, 30% modulation) | | Commutateur STATION CALL de SX-4 | Point de réglage | Méthode de réglage |
|---|---|---|---|---|---|
| | Fréquence | Niveau | | | |
| 1 | Pas de signal | | Appuyer la touche nº 1 | L203 | 2V CC entre la borne nº 36 et la borne de terre. |
| 2 | Pas de signal | | Appuyer la touche nº 4 | TC202 | 25V CC entre la borne nº 36 et la borne de terre. |
| 3 | Répéter les phases 1 et 2 afin d'obtenir les deux caractéristiques correctes. | | | | |
| 4 | 603kHz (*3) | 40dB | Appuyer la touche nº 2 | Antenne tige (L202) | Régler le voltage en CC entre la broche 16 de Q201 et la terre à son maximum. |
| 5 | 1395kHz (*3) | 40dB | Appuyer la touche nº 3 | TC201 | |
| 6 | Répéter les phases 4 et 5 afin d'obtenir la sensibilité maximum. | | | | |
| 7 | Placer le commutateur AM CHANNEL STEP en position 10kHz. | | | | |



# 10. AJUSTE

### Ajuste de la corriente desvatada

1. Sin carga o señal de entrada alguna, girar el control VOLUME a su posición mínima.
2. Coloque el interruptor POWER en ON y déjelo durante unos 10 minutos.
3. Verificar que la tensión (CC) entre el terminal (-) TP-Izq. (TP-Der.) en el complejo de conjunto y el terminal (+) de los altavoces (SPEAKERS) (+), en el panel posterior oscile entre 2,35mV y 117,5mV.
4. Si la tensión es inferior a los 2,35mV, cortar el puente JP1 (JP2). Si la tensión excede 117,5 mV, verifique la posibilidad de falla del circuito.

### Ajuste del Sintonizador de FM

- Conectar el generador de señales de FM (FM SG) al terminal FM ANTENNA 300ohmios a través de una antena ficticia de 300ohmios.
- Ajustar el interruptor FM (FUNCTION) en la posición ON y el interruptor MONO/MUTE OFF en la posición MONO/MUTE OFF.
- Conéctelo entre la clavija 10 y la clavija 38 del Q5 en la conjunto de control (GWX-721) por un corto período de tiempo. (Las frecuencias de prueba son acumuladas en la memoria. Esta operación es un programa controlado por la computadora.)

(*1) Sintonizar el FM SG con el SX-4.

(*2) Conectar el generador de señales de FM multiplex al terminal modulador exterior del FM SG. Ajustar la modulación a Principal, 1kHz/Izq.+Der. (L+R)/±67,5kHz de desviación; Piloto 19kHz/ ±7,5kHz de desviación.

| Paso | FM SG (400Hz, ±75kHz desviación) | | Interruptor STATION CALL SX-4 | Punto de ajuste | Procedimientos de ajuste |
|---|---|---|---|---|---|
| | Frecuencia | Nivel | | | |
| 1 | Sin señal | | Presione 1 | L103 | 7,2V CC entre el terminal no. 36 y masa. |
| 2 | Sin señal | | Presione 6 | TC103 | 25V CC entre el terminal no. 36 y masa. |
| 3 | Repetir los pasos 1 y 2 hasta que ambas especificaciones sean correctas. | | | | |
| 4 | 90,0MHz (*1) | 40dB | Presione 3 | L101,L102 | Ajustar hasta que la tensión de CC entre la clavija 13 del Q107 y tierra sea la máxima. |
| 5 | 106,0MHz (*1) | 40dB | Presione 5 | TC101, TC102 | |
| 6 | Repetir los pasos 4 y 5 hasta lograrse la máxima sensibilidad. | | | | |
| 7 | 99,0MHz (*1) | 60dB | Presione 4 | T101 | Ajustar hasta que la tensión de CC entre la clavija 13 del Q107 y tierra sea la máxima. |
| 8 | 99,0MHz (*1) | 60dB | Presione 4 | T102 | Ajustar hasta que le distorsión en el terminal TAPE REC Izq. (L) Der. (R) sea la mínima. |
| 9 | Ajustar el interruptor MONO/MUTE OFF en la posición STEREO/MUTE ON. | | | | |
| 10 | 99,0MHz (*1) | 60dB (son modulación) | Presione 4 | VR101 | Ajustar la señal en el terminal no. 14 a 19kHz (±100Hz). |
| 11 | 99,0MHz (*1) Ajustar a modulación estereofónica (*2) | 60dB | Presione 4 | T101 (dentro de ±90°) | Ajustar hasta que la distorsión en el terminal TAPE REC Izq. (L) Der. (R) sea la mínima. |
| 12 | 99,0MHz (*1) | Variable | Presione 4 | R126 | Confirmar que la operación de silenciamiento se detonga por encima de los 36dB. Si no fuera así, remueva el R126. |

## Ajuste del Sintonizador de AM

- Conectar el generador de señales de AM (FM SG) al terminal AM ANTENA a través de un resistor de 10Kohmio.
- Ajustar el interruptor de AM (FUNCTION) en la posición ON y el interruptor AM CHANNEL STEP (del panel posterior) en la posición de 9kHz.
- Conéctelo entre la clavija 10 y la clavija 38 del Q5 en la conjunto de control (GWX-721) por un corto período de tiempo. (Las frecuencias de prueba son almacenadas en la memoria. Esta operación es un programa controlado por la computadora.)

(*3) Sintonizar el AM SG con el SX-4.

| Paso | FM SG (400Hz, 30% modulación) | | Interruptor STATION CALL SX-4 | Punto de ajuste | Procedimientos de ajuste |
|---|---|---|---|---|---|
| | Frecuencia | Nivel | | | |
| 1 | Sin señal | | Presione 1 | L203 | 1V CC entre el terminal no. 36 y masa. |
| 2 | Sin señal | | Presione 4 | TC202 | 25V CC entre el terminal del no. 36 y masa. |
| 3 | Repetir los pasos 1 y 2 hasta que ambas especificaciones sean correctas. | | | | |
| 4 | 603kHz (*3) | 40dB | Presione 2 | Antena de barra (L202) | Ajustar hasta que la tensión de CC entre la clavija 16 del Q201 y tierra sea la máxima. |
| 5 | 1395kHz (*3) | 40dB | Presione 3 | TC201 | |
| 6 | Repetir los pasos 4 y 5 hasta logarse la máxima sensibilidad. | | | | |
| 7 | Ajustar el interruptor AM CHANNEL STEP en la posición 10kHz. | | | | |