

SERVICE MANUAL

AM/FM STEREO RECEIVER SANSUI G-2000/3000



Sansui

SANSUI ELECTRIC CO., LTD.



SPECIFICATIONS

G-2000

| | |
|--|--|
| Audio section | |
| Power output | |
| Min. RMS, both channels driven, from 20 to 20,000Hz, with no more than 0.2% total harmonic distortion. | |
| 16 watts per channel into 8 ohms | |
| 16 watts per channel into 4 ohms | |
| Load impedance | 4 and 8 ohms |
| Total harmonic distortion | less than 0.2% at or below rated min. RMS power output |
| Intermodulation distortion (70Hz: 7 kHz = 4:1 SMPTE method) | less than 0.2% |
| Frequency response (at 1 watt) | 10 to 50,000Hz ± 1 dB -2 dB |
| RIAA curve deviation (PHONO) | $+0.5$ dB -0.5 dB (30 to 15,000Hz) |
| Damping factor | approximately 30 at 8 ohms load |
| Input sensitivity and impedance (1 kHz, for rated power output) | |
| PHONO | 2.5 mV/47 kilohms (Max. input capability; 200 mV at 1 kHz, less than 0.5% total harmonic distortion) |
| AUX, TAPE | 150 mV/47 kilohms |
| Output level (1 kHz) | |
| TAPE REC (pin jack) | 150 mV/47 kilohms (DIN) |
| Channel separation (1 kHz, at rated power output) | |
| PHONO | better than 50 dB |
| AUX | better than 50 dB |
| Hum and noise (short-circuit, A network) | |
| PHONO | 75 dB |
| AUX | 90 dB |
| Controls | |
| BASS | ± 10 dB (50 Hz) |
| TREBLE | ± 10 dB (10 kHz) |
| LOUDNESS (-30 dB) | 7 dB at 50 Hz 5 dB at 10 kHz |

FM section

| | |
|--|---|
| Tuning range | 88 to 108 MHz |
| Usable sensitivity | |
| Mono IHF | 11.0 dBf (1.95 μ V) |
| DIN | 1.2 μ V |
| Stereo IHF | 19.0 dBf |
| 50 dB Quieting sensitivity | |
| Mono | 18 dBf |
| Stereo | 39 dBf |
| Signal to noise ratio (at 65 dBf) | |
| Mono | 70 dB |
| Stereo | 67 dB |
| Distortion (at 65 dBf) | |
| Mono | less than 0.2% at 100 Hz less than 0.18% at 1,000 Hz less than 0.3% at 6,000 Hz |
| Stereo | less than 0.3% at 100 Hz less than 0.25% at 1,000 Hz less than 0.4% at 6,000 Hz |
| Alternate channel selectivity (at 400 kHz) | 50 dB |
| Capture ratio | 1.5 dB |
| Image response ratio | 48 dB (at 98 MHz) |
| Spurious response ratio | 70 dB (at 98 MHz) |
| Stereo separation | 30 dB at 100 Hz 40 dB at 1,000 Hz 28 dB at 10,000 Hz |
| Frequency response | 30 to 15,000 Hz $+0.5$ dB -2 dB |
| Antenna input impedance | 300 ohms balanced 75 ohms unbalanced |
| AM section | |
| Tuning range | 530 to 1,600 kHz |
| Usable sensitivity (Bar antenna) | 50 dB/m (300 μ V/m) |
| Selectivity | 35 dB |
| Signal to noise ratio | 46 dB |
| Power requirements | |
| Power voltage | 100, 120, 220, 240V (50/60 Hz) 120V (Usable 110 ~ 130V) 60 Hz (for U.S.A. and Canada only) |
| Power consumption | Rated consumption 90 watts 100 VA |

| | |
|------------|---|
| Dimensions | 433 mm (17-1/16") W 153 mm (6-1/16") H 352 mm (13-7/8") D |
| Weight | 7.3 kg (16.1 lbs) net 8.7 kg (19.2 lbs) packed |

* Design and specifications subject to change without notice for improvements.

SPECIFICATIONS

G-3000

Audio section

Power output

Min. RMS, both channels driven, from 20 to 20,000Hz, with no more than 0.15% total harmonic distortion.

26 watts per channel into 8 ohms

26 watts per channel into 4 ohms

Load impedance 4 and 8 ohms

Total harmonic distortion

less than 0.15% at or below rated min. RMS power output

Intermodulation distortion (70Hz: 7kHz = 4:1 SMPTE method) less than 0.15%

Frequency response (at 1 watt)

10 to 50,000Hz +1 dB -2dB

RIAA curve deviation (PHONO)

+0.5 dB -0.5 dB (30 to 15,000Hz)

Damping factor approximately 30 at 8 ohms load

Input sensitivity and impedance (1 kHz, for rated power output)

PHONO 2.5mV/47 kilohms

(Max. input capability; 200mV at 1kHz, less than 0.5% total harmonic distortion)

AUX, TAPE 150mV/47 kilohms

Output level (1kHz)

TAPE REC (pin jack) 150mV/47 kilohms (DIN) 43mV

Channel separation (1kHz, at rated power output)

PHONO better than 50dB

AUX better than 50dB

Hum and noise (short-circuit, A network)

PHONO 75 dB

AUX 90dB

Controls

BASS ±10dB (50Hz)

TREBLE ±10dB (10kHz)

LOUDNESS (-30dB) 7 dB at 50Hz

. 5 dB at 10kHz

FM section

Tuning range 88 to 108MHz

Usable sensitivity

Mono IHF 11.0dBf (1.95 μV)

DIN 1.2 μV

Stereo IHF 19.0dBf

50dB Quieting sensitivity

Mono 18dBf

Stereo 39dBf

Signal to noise ratio (at 65dBf)

Mono 70dB

Stereo 67dB

Distortion (at 65dBf)

Mono less than 0.2% at 100Hz

less than 0.18% at 1,000Hz

less than 0.3% at 6,000Hz

less than 0.3% at 100Hz

less than 0.25% at 1,000Hz

less than 0.4% at 6,000Hz

Alternate channel selectivity (at 400kHz)

. 50dB

Capture ratio 1.5dB

Image response ratio 48 dB (at 98MHz)

Spurious response ratio 70dB (at 98MHz)

Stereo separation 30dB at 100Hz

40dB at 1,000Hz

28dB at 10,000Hz

Frequency response 30 to 15,000Hz +0.5 dB -2dB

Antenna input impedance

. 300 ohms balanced

. 75 ohms unbalanced

AM section

Tuning range 530 to 1,600kHz

Usable sensitivity (Bar antenna)

. 50dB/m (300 μV/m)

Selectivity 35dB

Signal to noise ratio 46dB

Power requirements

Power voltage 100, 120, 220, 240V (50/60Hz)

120V (Usable 110 ~ 130V)

60Hz

(for U.S.A. and Canada only)

Power consumption

Rated consumption 120 watts 140 VA

Dimensions 433mm (17-1/16") W

153mm (6-1/16") H

352mm (13-7/8") D

Weight 8 kg (17.6 lbs) net

9.4 kg (20.7 lbs) packed

* Design and specifications subject to change without notice for improvements.

1. OPERATIONS

Pop-noise preventive circuit

In order to prevent the annoying pop-noise to the loudspeakers at turning the power of the amplifier ON, the pop-noise preventive circuit adopted in the G-3000 is the combination of the conventional driver-voltage delay type used in the power supply (rectifier) circuit and the NF delay type pop-noise preventive circuits. The configuration of NF delay type pop-noise preventive circuit is shown in Fig. 1.

In this circuit, the switching (ON-OFF) of the transistor TR05 is made by the time constant of the capacitor C40 and resistor R88. Thereby the NF resistor, R51 is controlled, and the gain of the main amplifier stage is lowered when TR05 is ON, thus the voltage drift (transient voltage) of the main amplifier at turning the power ON does not appear on the speaker terminals for very short period of time. In other words, at the instant that the power is turned ON, the voltage at the point A rises up to +13V, then the voltage decreases by means of the time constant of C40 and R88 as shown in Fig. 2. At this time, the diode D11 is inversely biased, consequently, the potential voltage of the point B is 0V as Fig. 3. Because of this, TR05 turns to the cut-off, thus the NF resistor, R51 acquires such a state as its resistance value becomes equivalently very large, which decreases the gain of the power amplifier. When the charge of the C40 is completed, the voltage of the point B (see Fig. 3) becomes negative, as a result, the diode D11 is biased. Therefore, TR05 is turned ON, and the circuit of this equipment is normally operated approximately 2 seconds after the power is turned ON to prevent the pop-noise which flows to loudspeakers.

Fig. 1

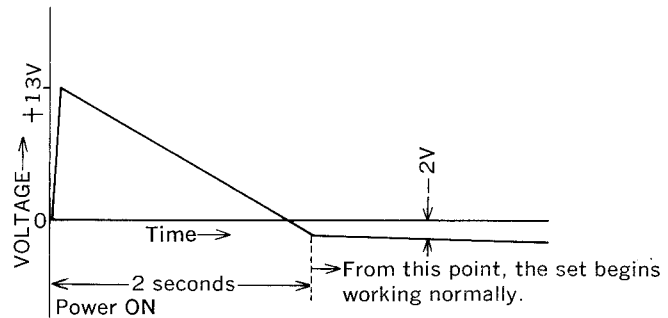
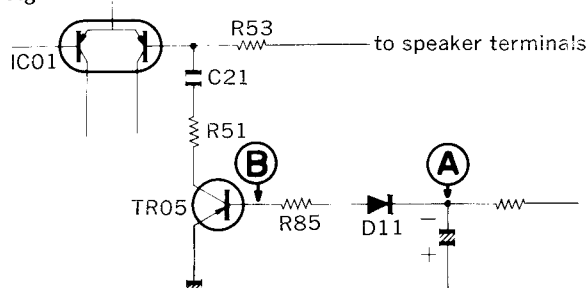


Fig. 2 Voltage variation during a certain period of time at ①

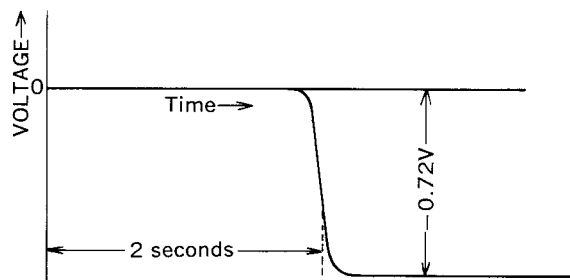
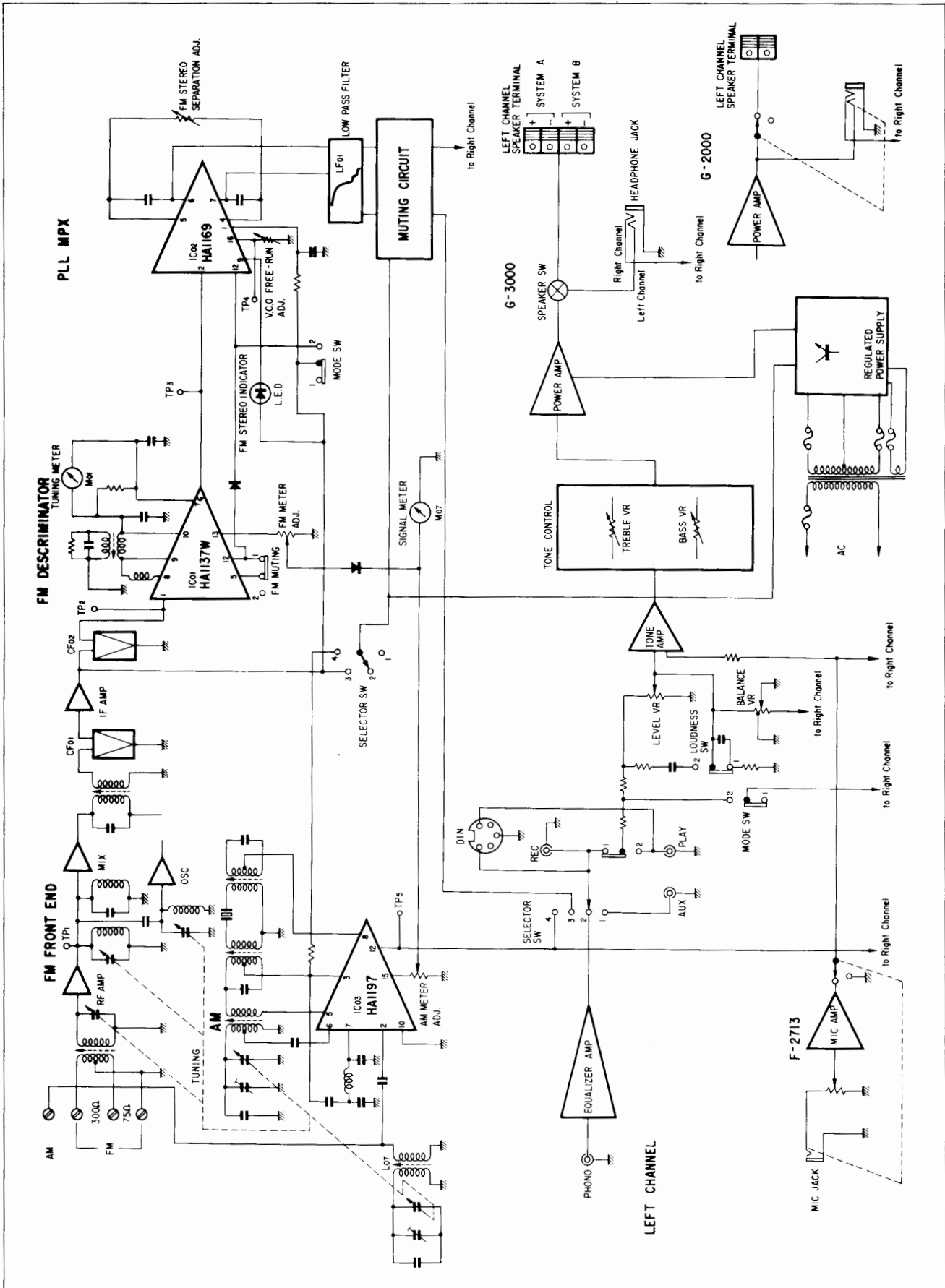


Fig. 3 Voltage variation at ②

2. BLOCK DIAGRAM

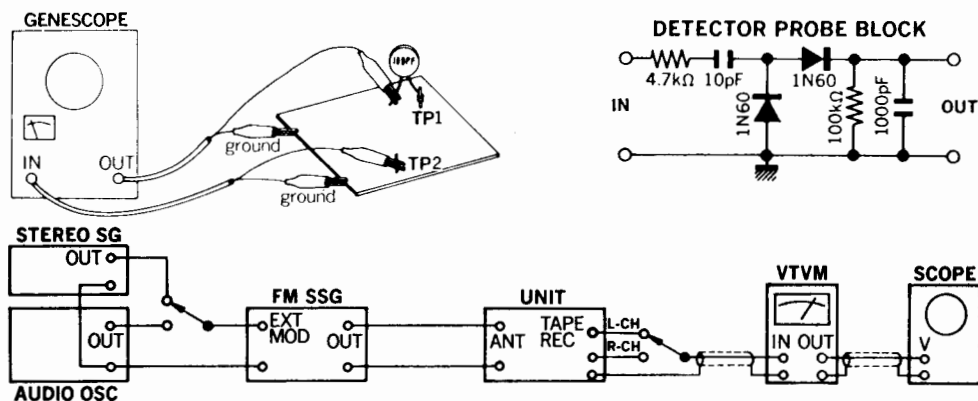


3. ADJUSTMENTS

* Refer to the picture of top view indicating test points on page 4.

1) FM Adjustment

- Note: 1. Selector FM AUTO
 2. FM Muting Switch OFF
 3. Connection . . Connect the output of genescope to TP through 100pF ceramic capacitor.

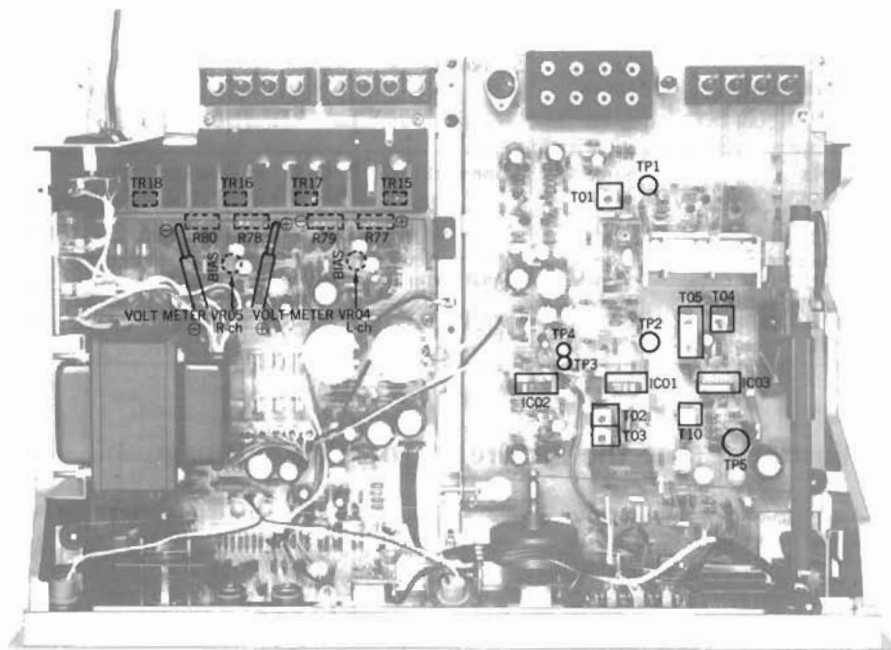


(1) FM IF Adjustment & Dial Calibration

| STEP | SUBJECT | FEED SIGNAL | | MEASURE OUTPUT | ADJUST | ADJUST FOR | REMARKS |
|------|-------------------------|--|-------------------|----------------------------------|-------------------|---|---------|
| | | FROM | TO | | | | |
| 1. | IF Coil | Output 80dB Genescope | TP1 F-2707 | TP2 F-2707 Use Detector Probe | T01 F-2707 | Max. IF waveform | |
| 2. | Discriminator Coil | Same as above | Same as above | TP3 F-2707 | T02, T03 F-2707 | Steep linearity of S curve Make symmetrical S curve | |
| 3. | Tuning Meter | 98MHz ANT Input 65dBf (59.8dB) 1000Hz (100% MOD) FM SSG | ANT terminal 300Ω | Tuning Meter | T02 F-2707 | Center on Meter | |
| 4. | 90MHz Dial Calibration | 90MHz ANT Input 65dBf (59.8dB) 1000Hz (100% MOD) FM SSG | Same as above | REC terminal VTVM & Scope | L03 F-2707 | Max. indication on Signal meter & Center indication on Tuning meter | |
| | 106MHz Dial Calibration | 106MHz ANT Input 65dBf (59.8dB) 1000Hz (100% MOD) FM SSG | Same as above | Same as above | TC03 F-2707 | | |
| 5. | 90MHz RF Adj. | 90MHz ANT Input Minimum value with sine wave 1000Hz (100% MOD) FM SSG | Same as above | Same as above | L01, L02 F-2707 | Same as above | |
| | 106MHz RF Adj. | 106MHz ANT Input Minimum value with sine wave 1000Hz (100% MOD) FM SSG | Same as above | Same as above | TC01, TC02 F-2707 | Same as above | |
| 6. | Signal Meter Volume | 98MHz ANT Input 65dBf (59.8dB) 1000Hz (100% MOD) FM SSG | Same as above | Signal Meter | VR03 F-2707 | 4.3 on Meter | |

(2) FM STEREO Adjustment

| STEP | SUBJECT | FEED SIGNAL | | MEASURE OUTPUT | ADJUST | ADJUST FOR | REMARKS |
|------|---|---|----------------------|---|----------------|-----------------|--|
| | | FROM | TO | | | | |
| 1. | PLL VCO Adj. | 98MHz ANT Input 65dBf (59.8dB) FM SSG Pilot 19kHz (9% MOD) SUB 1 kHz + Pilot (100% MOD) STEREO SG | ANT terminal 300Ω | Stereo indicator | VR01 F-2707 | Light indicator | Adjust the VR01 within center of lighting level. |
| | PLL VCO Adj. In case of using Freq. counter. | 98MHz ANT Input 65dB (59.8dB) FM SSG | Same as above | TP4 F-2707 Use Freq. counter | VR01 F-2707 | 76 kHz ±150Hz | |
| 2. | Separation | 98MHz ANT Input 65dBf (59.8dB) FM SSG Pilot 19kHz (9% MOD) R (or L) Mode 1 kHz + Pilot (100% MOD) STEREO SG | Same as above | REC terminal R-CH → L-CH VTVM & Scope | VR02 F-2707 | Set 34dB | Confirm separation L-CH → R-CH (34dB) |



<Top View>

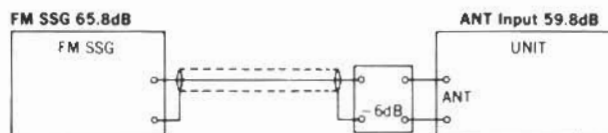
※ NEW MEASUREMENT FOR FM

Input signal level under the provision of IHFM-T-200, a new measurement method is indicated by available power ratio "dBf". To obtain approximate available power ratio "dBf", abstract 0.8 from attenuator indication of general FMSSG (open load indication type); however, the conventional measurement, IHFM-T-100 is designated together too.

The way of modulation on IHFM-T-200 is shown below.

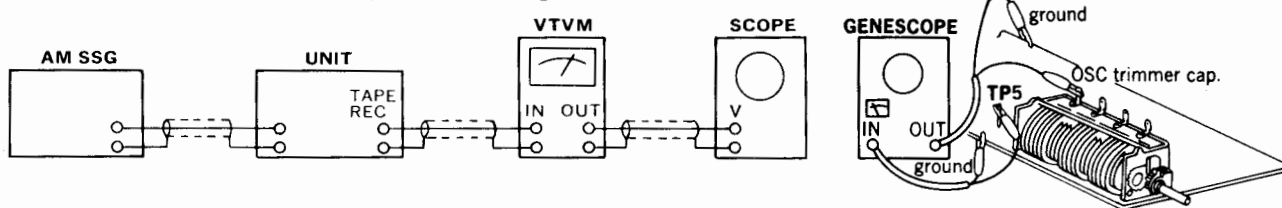
| | modulation frequency | modulation mode | modulation factor |
|-----------|----------------------|-----------------|------------------------------|
| FM MONO | 1000Hz | | 100% |
| FM STEREO | 1000Hz | SUB | Pilot 9% Pilot + SUB 100% |

※The relation between the standard input 65 dBf of IHFM-T-200 and the former indication "dB" is shown in below.



2) AM IF Adjustment & Dial Calibration

- Note: 1. Selector AM
 2. Confirm start point of dial pointer before alignment.



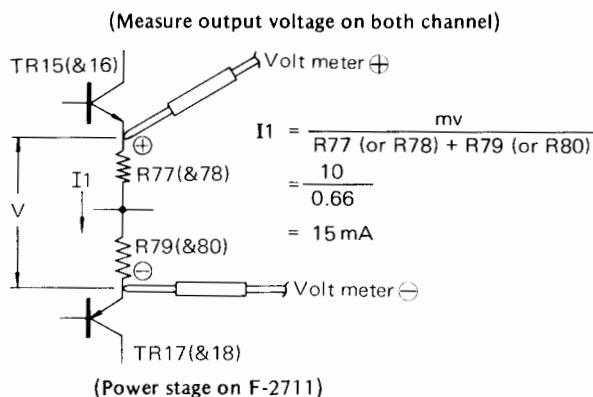
| STEP | SUBJECT | FEED SIGNAL | | MEASURE OUTPUT | ADJUST | ADJUST FOR | REMARKS |
|------|---------------------------|---|-----------------|-------------------------------------|-----------------|---------------------------------|---------|
| | | FROM | TO | | | | |
| 1. | IF Coil | Genescope Output level 70dB | TC05 F-2707 | TP5 F-2707 | T05 L10 F-2707 | Max. IF waveform | |
| 2. | 600kHz Dial Calibration | 600 kHz ANT Input 60dB 400 Hz (MOD 30%) AM SSG | AM ANT terminal | REC terminal L or R-CH VTVM & Scope | T04 F-2707 | Max. indication on signal meter | |
| | 1400 kHz Dial Calibration | 1400 kHz ANT Input 60dB 400 Hz (MOD 30%) AM SSG | Same as above | Same as above | TC04 F-2707 | Same as above | |
| 3. | 600 kHz RF Adj. | 600 kHz ANT Input 50dB 400 Hz (MOD 30%) AM SSG | Same as above | Same as above | Bar Antenna L07 | Same as above | |
| | 1400 Hz RF Adj. | 1400 kHz ANT Input 50dB 400 Hz (MOD 30%) AM SSG | Same as above | Same as above | TC05 F-2707 | Same as above | |
| 4. | Signal Meter volume | 1000 kHz ANT Input 80dB 400 Hz (MOD 30%) AM SSG | Same as above | Signal Meter | VR04 F-2707 | 4.5 on meter | |

3) Bias Current Adjustment (See the Picture of Top View on page 4)

1. Confirm AC power supply voltage (100V, 117V, 220V or 240V).
2. Level Volume Minimum
3. Room Temperature 18°C ~ 28°C (65°F ~ 83°F)
4. Before this adjustment, turn bias adjustment volumes of VR04 and VR05 fully counterclockwise, then run this unit for more than three minutes.

Note: For this adjustment, put the lead + (plus) side of volt meter and + (plus) side of R77 (& R78) and the lead - (minus) side to - (minus) side of R79 (& R80) on both channels.

L-ch R77, R79
 R-ch R78, R80



| STEP | SUBJECT | EQUIPMENT | MEASURE OUTPUT | ADJUST | ADJUST FOR |
|------|-------------------|---------------|----------------|-------------|---------------------|
| 1 | Bias Current L-CH | DC Volt meter | * See above | VR04 F-2711 | 10 mV ±1 mV (15 mA) |
| 2 | Bias Current R-CH | DC Volt meter | * See above | VR05 F-2711 | 10 mV ±1 mV (15 mA) |

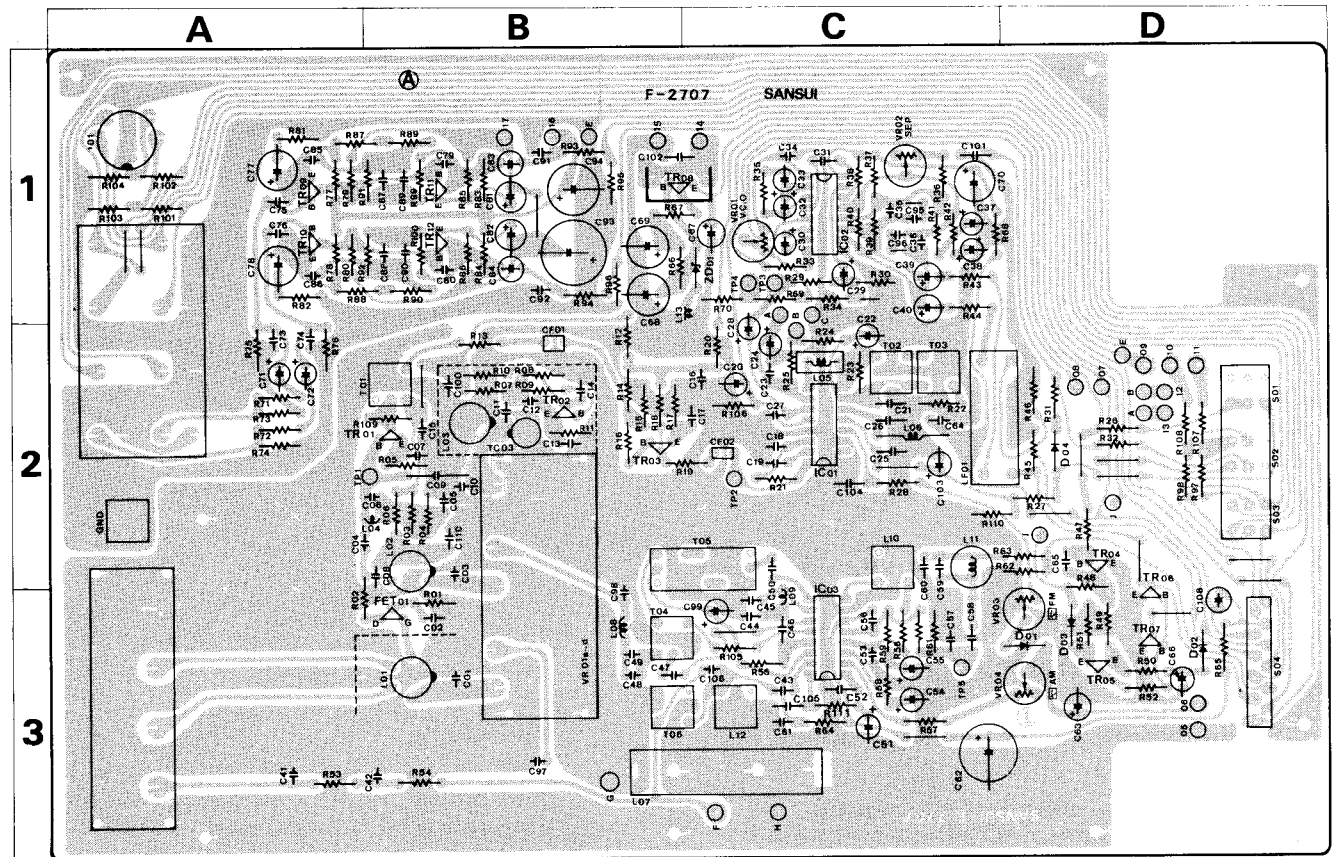
4. PARTS LOCATION & PARTS LIST

1) F-2707 AM/FM Tuner & FM MPX Circuit Board

Conductor Side

(Stock No. 7521551, G-2000)(Stock No. 7521521, G-3000)

Since some of capacitors and resistors are omitted from parts lists in this Service Manual, refer to the Common Parts List for capacitors & resistors which was appended previously to each Sansui Manual.

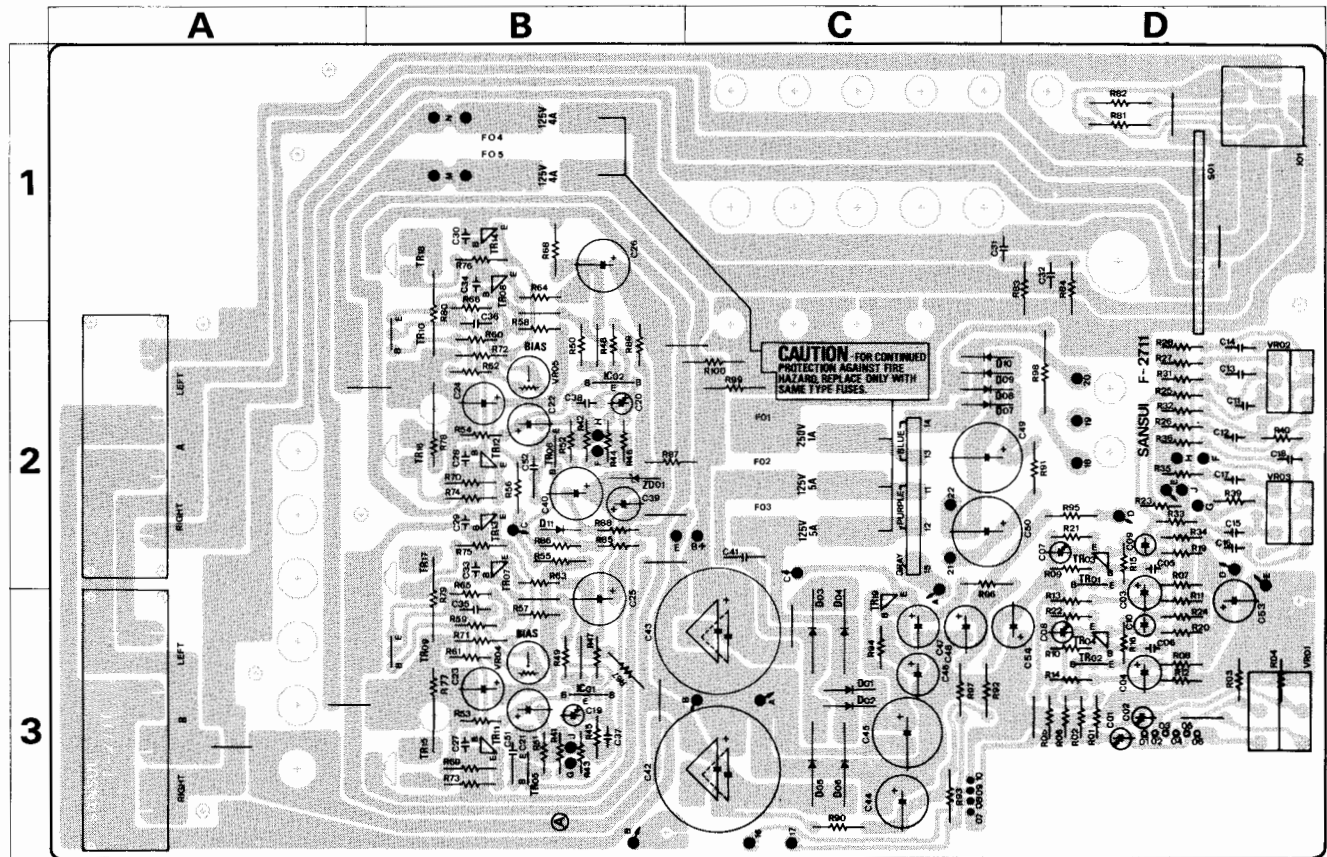


Parts List

| Parts No. | Stock No. | Description | Position | Parts No. | Stock No. | Description | Position |
|-----------|------------|---------------------------------|----------|-----------|------------|--------------------------------------|----------|
| TR01, 02 | 0305801, 2 | 2SC1047 (B, C) | 2B | L 03 | 4220400 | O.S.C. Coil | 2B |
| TR03 | 0306341, 2 | 2SC1674 (L, K) | 2B | L 04 | 4900140 | 1 μ H } Inductor Coil | 2C |
| TR04 | 0305951, 2 | 2SC945 (Q, P) | 2D | L 05 | 4290300 | 18 μ H } Inductor Coil | |
| TR05 | 0300470 | 2SA726W (F) | 3D | L 06 | 4290011 | Peaking Coil 3.5 μ H | 3C |
| TR06, 07 | 0306390 | 2SC1636-1 | 3D | L 07 | 4200750 | Antenna Coil (AM) | |
| TR08 | 0308450, 1 | 2SD356 (C, D) | 1B, C | L 08 | 4900140 | 1 μ H Inductor Coil | 3B |
| TR09, 10 | 0300900, 1 | 2SA906 (G, H) | 1A | L 09 | 4900110 | 100 μ H Inductor Coil | 2C |
| TR11, 12 | 0306070, 1 | 2SC1313 (F, G) | 2A | L 10 | 4230620 | 1F Coil (AM) | |
| IC 01 | 0360350 | HA1137W | 2C | L 11 | 4900060 | 22mH Inductor | 2C |
| IC 02 | 0360320 | HA1196 | 1C | T 01 | 4235930 | 1F Coil (FM) | 2B |
| IC 03 | 0360390 | HA1197 | 3C | T 02 | 4235990, 1 | 1F Coil | 2C |
| FT01 | 0370172 | 2SK49 (H) FET | | T 03 | 4236000, 1 | 1F Coil | 2C |
| D 01 ~ 04 | 0311160 | 1S2473D Diode | 2,3D | T 04 | 4220650 | OSC Coil (AM) | 3B |
| ZD01 | 0315970 | EQA01-13R Zener Diode | 1C | T 05 | 0910370 | Ceramic Filter (AM) | 2C |
| C 01, 03 | 0669347 | 12pF 50V C.C. | 3B, 2B | CF01, 02 | 0910380 | Ceramic Filter (FM) | 1C |
| C 04 | 0669210 | 10pF 50V C.C. | 2A | LF01 | 0910220 | Low Pass Filter | |
| C 06 | 0669503 | 3pF 50V C.C. | 2B | VR01 | 1034250 | 4.7 k Ω (B) VCO Free-Run | 1C |
| C 09 | 0679012 | 1.5pF 500V Gimmick Capacitor | 2B | VR02 | 1035210 | 220 k Ω (B) Stereo Separation | |
| C 10 | 0669019 | 18pF 50V C.C. | 2B | VR03 | 1035150 | 22k Ω (B) FM Meter | 3D |
| C 11, 12 | 0669320 | 10pF 50V C.C. | 2B | VR04 | 1035110 | 4.7k Ω (B) AM Meter | 3D |
| C 13 | 0669345 | 10pF 50V C.C. | 2B | | | Adjusting VR | |
| C 32 | 0573159 | 1.5 μ F 35WV T.C. | 1C | S 01 | 1131060, 1 | Push Switch, FM muting | 2D |
| C 33 | 0573339 | 3.3 μ F 35WV T.C. | 1C | S 02 | 1101840 | Rotary Switch, selector | 2D |
| C 34 | 0629005 | 360pF 50V P.C. | 1C | VC01 | 1220210 | AM FM Variable Capacitor | 2,3B |
| C 48 | 0669400 | 15pF 50V C.C. | 3B | TC03 | 1230090 | Trimmer Capacitor | 1C |
| C 49 | 0620361 | 360pF 50V P.C. | 3B | J 01 | 2090030 | 5P DIN Socket | |
| C 89, 90 | 0620161 | 160pF 50V P.C. | 1B | | 2210330 | 4P Antenna Terminal | 3B |
| C 95, 96 | 0620561 | 560pF 50V P.C. | 1C | | 2230180 | Ground Terminal | |
| C 97 | 0669563 | 3pF 50V C.C. | 3B | | 2200410, 1 | 8P Input Terminal | |
| C 98 | 0669400 | 15pF 50V C.C. | 3B | | | | |
| L 01 | 4200720 | Antenna Coil (FM) | 3B | | | | |
| L 02 | 4210340 | RF Coil | 2B | | | | |

2) F-2711 Pre/Main & Power Supply Circuit Board (Stock No. 7571781, G-2000) (Stock No. 7571771, G-3000)

Conductor Side



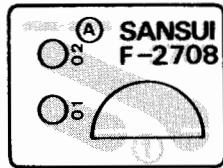
Parts List

| Parts No. | Stock No. | Description | Position | Parts No. | Stock No. | Description | Position | |
|-----------|------------|----------------------------|------------|-----------|------------|---------------------------------|-----------------------------|---------------|
| TR01,02 | 0300470, 1 | 2SA726W (F, G) | Transistor | R 87 | 0210272 | 2.7 kΩ ½W N.I.R. (G-2000) | 2B | |
| TR03,04 | 0306070, 1 | 2SC1313 (F, G) | | 2D,3D | R 90 | 0210221 | 1.2 kΩ ½W N.I.R. (G-3000) | 3C |
| TR05,06 | 0300510, 1 | 2SA733 (P, Q) (G-3000) | | 3B,2B | | 0210271 | 270Ω ½W N.I.R. (G-3000) | |
| TR07,08 | 0306371, 2 | 2SC1175 (E, F) (G-2000) | | 2B,1B | R 91 | 0192220 | 22Ω ½W F.R. | 2D |
| | 0306521, 2 | 2SC1439 (B, V) (G-3000) | | | R 92 | 0210471 | 470Ω ½W N.I.R. (G-2000) | 3C |
| TR09,10 | 0305951, 2 | 2SC945 (P, Q) | | 3B,2B | | 0210681 | 680Ω ½W N.I.R. (G-3000) | |
| TR11,12 | 0305930, 1 | 2SC1211 (C, D) (G-2000) | | 3B,2B | R 93 | 0210121 | 120Ω ½W N.I.R. (G-2000) | 3C |
| | 0308521, 2 | 2SD438 (E, F) (G-3000) | | | | 0210331 | 330Ω ½W N.I.R. (G-3000) | |
| TR13,14 | 0300310, 1 | 2SA697 (C, D) (G-2000) | | 2B,1B | R 95 | 0210471 | 470Ω ½W N.I.R. (G-2000) | 2D |
| | 0303361, 2 | 2SB560 (E, F) (G-3000) | | | | 0210681 | 680Ω ½W N.I.R. (G-3000) | |
| TR15,16 | 0308392, 3 | 2SD313 (E, F) (G-2000) | | 3B,2B | R 96 | 0210820 | 82Ω ½W N.I.R. (G-2000) | 2C |
| | 0306541, 2 | 2SC1986 (Q, Y) (G-3000) | | | | 0210151 | 150Ω ½W N.I.R. (G-3000) | |
| TR17,18 | 0303232, 3 | 2SB507 (E, F) (G-2000) | 2B,1B | R 97 | 0210121 | 120Ω ½W N.I.R. (G-2000) | 3C | |
| | 0300911, 2 | 2SA771 (Q, Y) (G-3000) | | | 0210271 | 270Ω ½W N.I.R. (G-3000) | | |
| TR19 | 0308521, 2 | 2SD438 (E, F) | 3C | R 98 | 0212829 | 8.2Ω 2W N.I.R. | 2D | |
| IC 01,02 | 0360290, 1 | 2SA798 (E, F) | 3B,2B | R 99,100 | 0211222 | 2.2 kΩ 1W N.I.R. | 2C | |
| D 01,02 | 0310340 | 10D1 | 3C | VR01 | 1011130, 1 | 250 kΩ (B) x 2 | Level Volume | |
| D 03 ~ 06 | 0310340 | 10D1 (G-2000) | Diode | VR02 | 1015300, 1 | 100 kΩ x 2 | Bass Volume | |
| | 0311530 | 30D2 (G-3000) | | 3C | VR03 | 1015300, 1 | 100 kΩ x 2 | Treble Volume |
| D 07 ~ 10 | 0310340 | 10D1 Diode | | 2C | S 01 | 1101850 | Rotary Switch (SP Selector) | 1D |
| D 11 | 0311160 | 1S2473D (G-3000 only) | | 2B | | | G-3000 only | |
| ZD01 | 0315970 | EQA01-13R Zener Diode | 2B | F 01 | 0432220 | 1A 250V | 2C | |
| C 41 | 0655103 | 10,000 pF 500V C.C. | 2C | F 02,03 | 0432280 | 4A 125V Fuse (G-2000) | 2C | |
| C 42,43 | 0549008 | 4,700 μF 35V E.C. (G-2000) | 3C | | 0432290 | 5A 125V AC Fuse (G-3000) | | |
| | 0549009 | 6,800 μF 35V E.C. (G-3000) | | J 01 | 2430380 | Head Phone Jack Socket (G-2000) | 1D | |
| R 55,56 | 0210182 | 1.8 kΩ ½W N.I.R. | 2B | | 2430360 | Head Phone Jack Socket (G-3000) | | |
| R 67,68 | 0192101 | 100Ω ½W F.R. | 3B,1B | | 2210340 | 4P Output Terminal | | |
| R 69 ~ 72 | 0192221 | 220Ω ½W F.R. | 3B,2B | | 2310220 | Fuse Holder (Large) | | |
| R 73 ~ 76 | 0192689 | 6.8Ω ½W F.R. | 1,2B | | | | | |
| R 77 ~ 80 | 0212338 | 0.33Ω 2W N.I.R. | 1,2B | | | | | |
| R 81,82 | 0211221 | 220Ω 1W N.I.R. | 1D | | | | | |
| R 83,84 | 0210479 | 4.7Ω ½W N.I.R. | 1D | | | | | |

3) F-2708 Circuit Board for Signal Meter

(Stock No. 7521561, G-2000) (Stock No. 7521531, G-3000)

Conductor Side



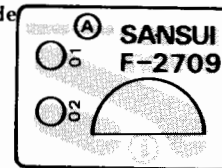
Parts List

| Parts No. | Stock No. | Description |
|-----------|------------|--------------|
| M01 | 4301110, 1 | Signal Meter |

4) F-2709 Circuit Board for Tuning Meter

(Stock No. 7521571, G-2000) (Stock No. 7521541, G-3000)

Conductor Side



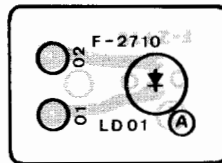
Parts List

| Parts No. | Stock No. | Description |
|-----------|------------|--------------|
| M02 | 4301120, 1 | Tuning Meter |

5) F-2710 Circuit Board for Stereo Indicator

(Stock No. 7540801, G-2000) (Stock No. 7540811, G-3000)

Conductor Side



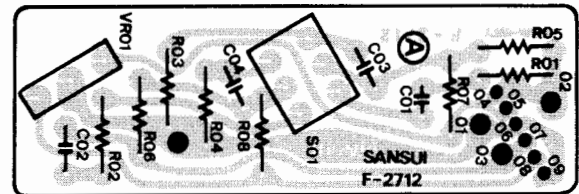
Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|---------------------|
| LD01 | 0319060 | Light Emitted Diode |

6) F-2712 Loudness Circuit Board

(Stock No. 7561951, G-2000) (Stock No. 7561961, G-3000)

Conductor Side



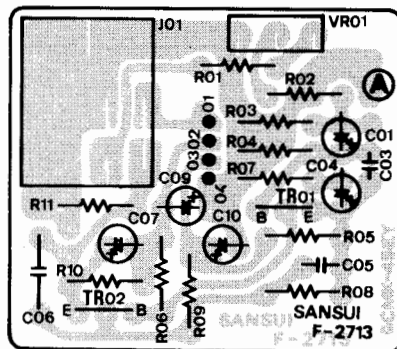
Parts List

| Parts No. | Stock No. | Description |
|-----------|------------|-------------------------------|
| VR01 | 1005350, 1 | 250 kΩ (B) x 2 Balance Volume |
| S 01 | 1131490, 1 | Push Switch, loudness |

7) F-2713 Microphone Amp Circuit Board

(Stock No. 7610161, G-2000) (Stock No. 7610151, G-3000)

Conductor Side



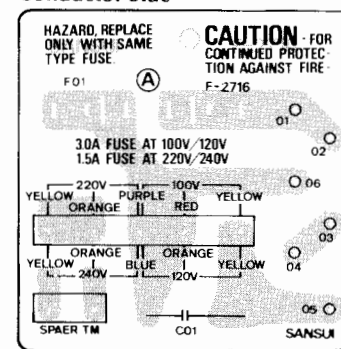
Parts List

| Parts No. | Stock No. | Description |
|-----------|------------|-----------------------------|
| TR01 | 0300470, 1 | 2SA726W (F, G) } Transistor |
| TR02 | 0306070, 1 | |
| VR01 | 1005340, 1 | 20 kΩ (A) Mixing Volume |
| J01 | 2430370 | Mic. Jack Socket |

8) F-2716 Voltage Selector Circuit Board

(Stock No. 7502491, G-2000) (Stock No. 7502501, G-3000)

Conductor Side



Parts List

| Parts No. | Stock No. | Description |
|-----------|-----------|---------------------|
| C 01 | 0659802 | 0.004 μF 150V C.C. |
| F 01 | 0432230 | 1.5A 250V |
| | 0432250 | 2.5A 250V (G-2000) |
| | 0432260 | 3A 250V (G-3000) |
| | 2310220 | Fuse Holder (Large) |

Abbreviations

| | |
|--|---|
| C.R. : Carbon Resistor | E.C. : Electrolytic Capacitor |
| S.R. : Solid Resistor | BP.E.C.: Bi-Polar Electrolytic Capacitor |
| Ce.R. : Cement Resistor | C.C. : Ceramic Capacitor |
| M.R. : Metal Film Resistor | MI.C. : Mica Capacitor |
| F.R. : Fusing Resistor | O.C. : Oil Capacitor |
| N.I.R. : Non-Inflammable Resistor | P.C. : Polystyrene Capacitor |
| M.C. : Mylar Capacitor | T.C. : Tantalum Capacitor |

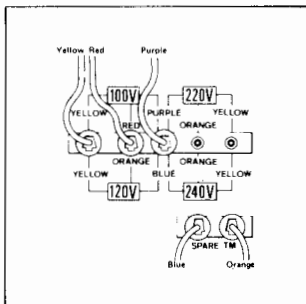
NOTE:

◇ **Changing Power Supply Voltage:** (This is applicable for universal type of G-2000/3000 only).

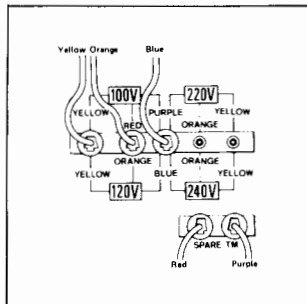
Your unit is adjusted to operate at the correct power supply voltage of your area prior to shipment from our factory. If you move to an outside country after purchasing it or send it as a gift to a friend living in an area where the voltage is different, it may be necessary to operate at the correct power supply voltage.

◇ When necessary, remove the bonnet from the unit and re-connect leads from power supply circuit board as described below in accordance with the required voltage (100V, 120V, 220V or 240V).

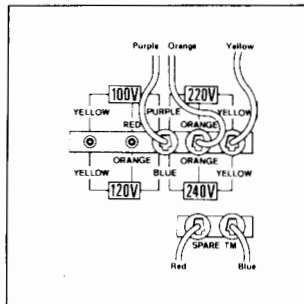
1) For 100V



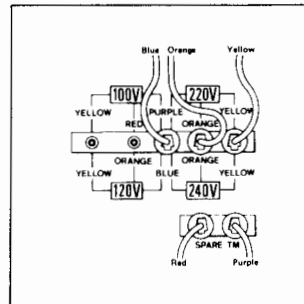
2) For 120V



3) For 220V



4) For 240V



5. PARTS REPLACEMENT

1) Square Knobs of Loudness, FM Muting, Mode & Tape Monitor

1. Take off a wood bonnet, front & inside panels.
2. Then, pull out knobs to which are not glued as Fig. 1.

2) Tuning & Signal Meter

1. Complete 1. & 2. above.
2. Take off the meter as Fig. 2, then put it back into same place until snapped.

Fig. 1

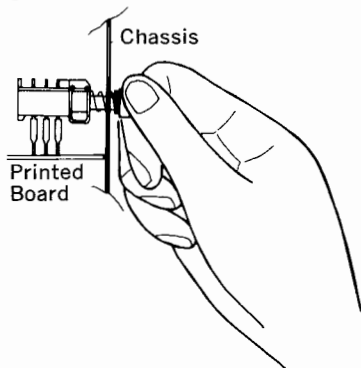
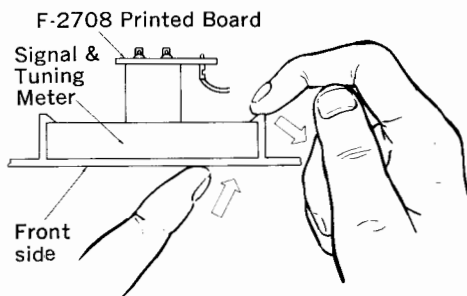


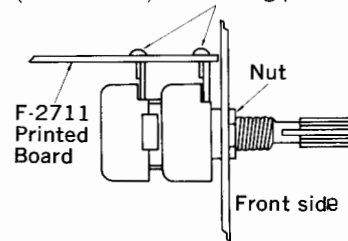
Fig. 2



3) Level Volume

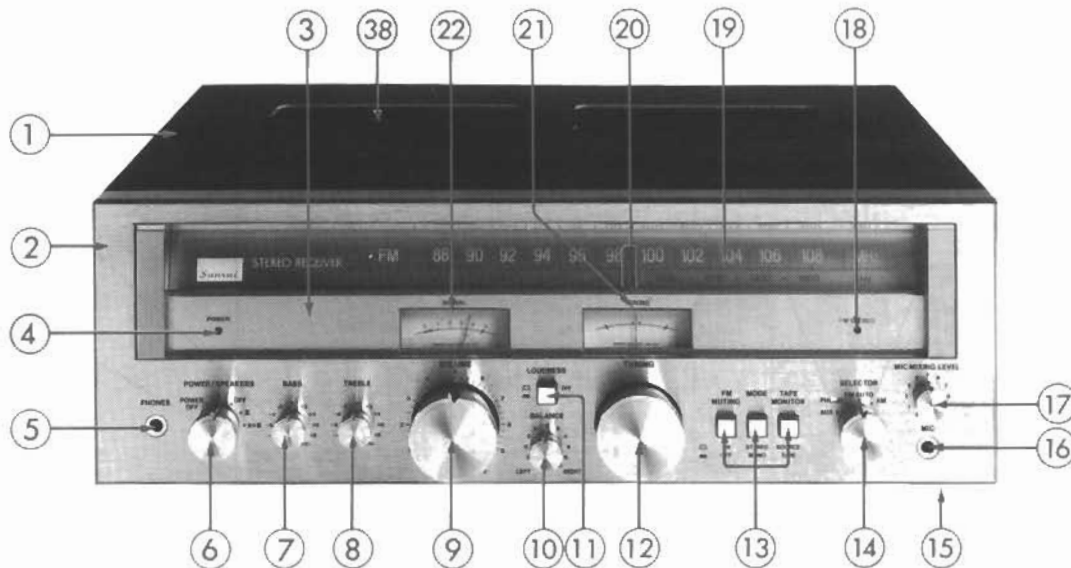
1. Take off the two panels and one nut for level volume.
2. Then, unsolder six points installing the level volume on pattern side of F-2711 printed board.

Fig. 3 Level Volume (Bottom side) Soldering points



6. OTHER PARTS

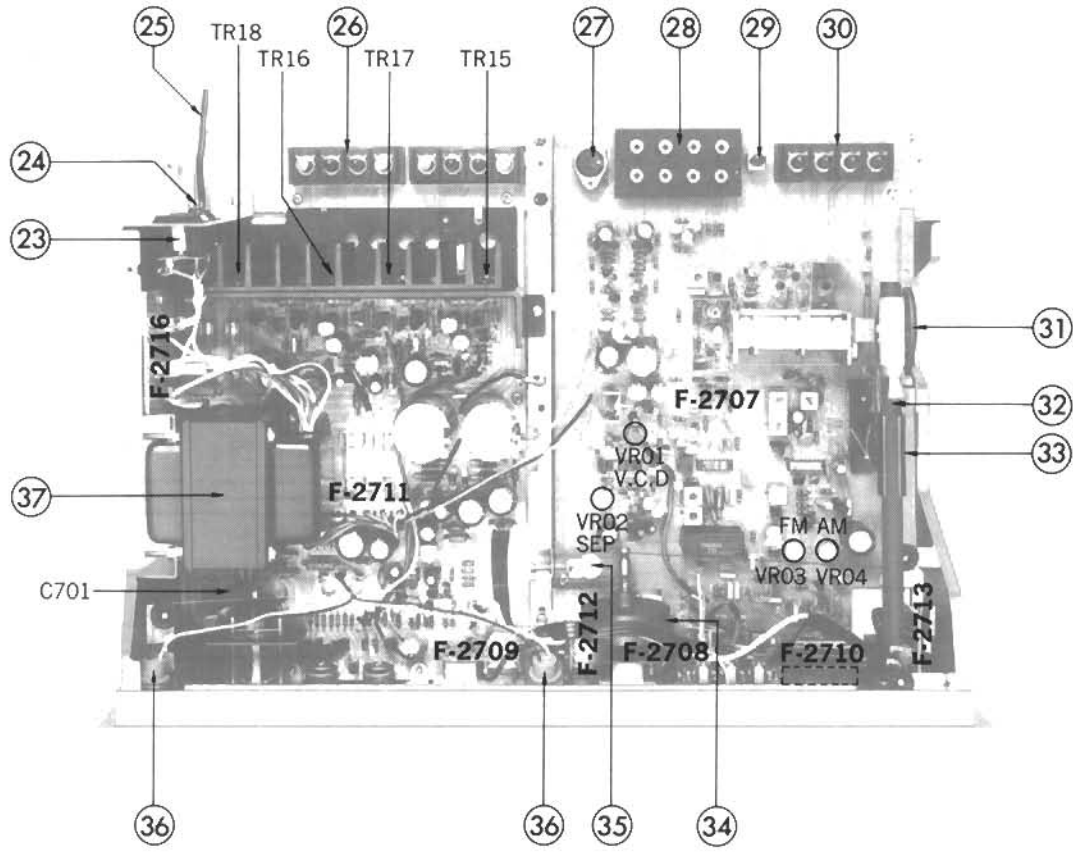
◀Front View▶



Parts List (Front & Top view)

| Parts No. | Stock No. | Description | Parts No. | Stock No. | Description |
|-----------|------------|---|-----------|------------|--|
| 1 | 5727060 | Wood Bonnet | 18 | 0319060 | L.E.D., FM Stereo Indicator |
| | 5236690 | W.B. Type Bushing | | 5289180 | L.E.D. Holder |
| 2 | 7007640 | Front Panel Ass'y (G-2000) | | 5136030 | Plastic Rivet |
| | 7007630 | Front Panel Ass'y (G-3000) | 19 | 5408200 | Dial Scale (G-2000) |
| 3 | 5305690 | Inside Panel | | 5408190 | Dial Scale (G-3000) |
| 4 | 5426410 | Power Illuminator Bar | | 5305720 | Backside Panel for dial scale |
| 5 | 2430380 | Head Phone Jack Socket (G-2000) | 20 | 7116030 | Dial Pointer Ass'y |
| | 2430360 | Head Phone Jack Socket (G-3000) | 21 | 4301120, 1 | Tuning Meter |
| 6 | 5319140 | Power & Speakers Switch Knob | 22 | 4301110, 1 | Signal Meter |
| | 1190530 | Power & Speakers Rotary Switch (G-2000) | 23 | 2450060 | AC Outlet |
| | 1101850 | Power & Speakers Rotary Switch (G-3000) | 24 | 3910600 | AC Cord Clip |
| | 5236470 | M9 x 7, spacer nut | 25 | 3800010, 4 | AC Cord |
| 7 | 5319130 | BASS Volume Knob | 26 | 2210340 | 4P Output Speaker Terminal (G-3000) |
| | 1015300, 1 | 100k Ω x 2 Bass Volume | 27 | 2090030 | 5P DIN Socket |
| 8 | 5319130 | Treble Volume Knob | 28 | 2200410, 1 | 8P Input Terminal |
| | 1015300, 1 | 100k Ω x 2 Treble Volume | 29 | 2230180 | Ground Terminal |
| 9 | 5318980 | Volume Knob | 30 | 2210330 | 4P Antenna Terminal |
| | 1005350, 1 | 250k Ω (B) x 2 Volume | 31 | 6146670 | D-44 Type Pulley |
| 10 | 5319130 | Balance Volume Knob | 32 | 4200750 | Bar Antenna |
| | 1005350, 1 | 250k Ω x 2 (B) Balance Volume | 33 | 5289170 | Bar Antenna Holder |
| 11 | 5326690 | Loudness Switch Knob | 34 | 7036540 | Tuning Unit |
| | 1131490, 1 | Loudness Switch | 35 | 7136100 | Tension Unit |
| 12 | 5318970 | Tuning Knob | 36 | 0400560 | Pilot Lamp Ass'y |
| 13 | 5326690 | Knob, tape monitor switch | 37 | 4002660 | Power Transformer (G-2000) |
| | 1131060, 1 | Tape Monitor Switch | | 4002650 | Power Transformer (G-3000) |
| 14 | 5319140 | Selector Switch Knob | 38 | 5305710 | Plastic Rear Panel |
| | 1101840 | Selector Switch | TR15, 16 | 0308392, 3 | 2SD313 (E, F) (G-2000) |
| | 5236470 | M9 x 7, spacer nut | | 0306541, 2 | 2SC1986 (Q, Y) (G-3000) |
| 15 | 5058790 | Bottom Plate | TR17, 18 | 0303232, 3 | 2SB507 (E, F) (G-2000) |
| | 5517250 | Leg | | 0300911, 2 | 2SA771 (Q, Y) (G-3000) |
| 16 | 2430370 | Microphone Jack Socket | | 5288721 | Plate for TR |
| 17 | 5319130 | Microphone Mixing Volume Knob | C 701 | 0605337 | 0.033 μ F 250V M.C. |
| | 1005340, 1 | 20k Ω (A) Mic Mixing Volume | R 701 | 0111335 | 3.3M Ω 1/2W S.R. (UL, CSA only) |
| | | | | 1230090 | Trimmer Capacitor |
| | | | | 1220210 | AM-FM Variable Capacitor |

<Top View>



7. SCHEMATIC DIAGRAM

1) G-2000

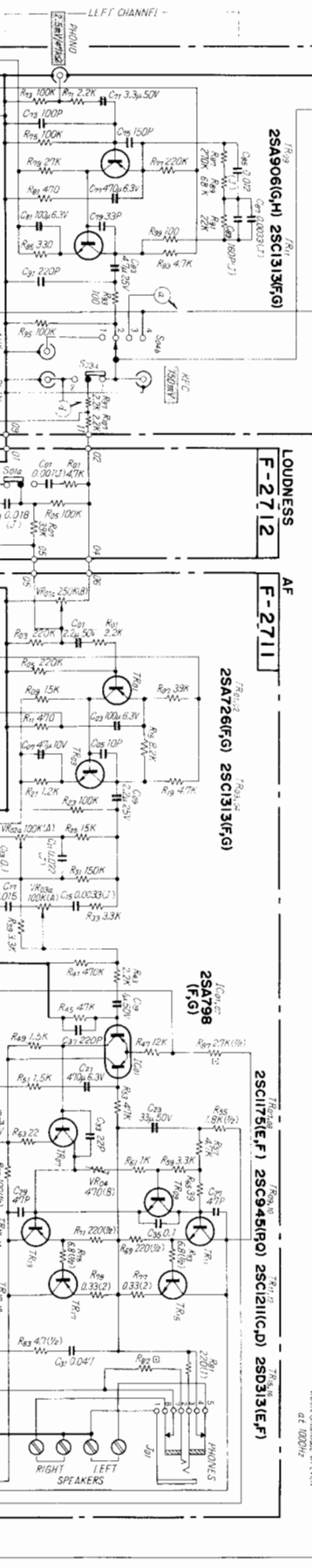
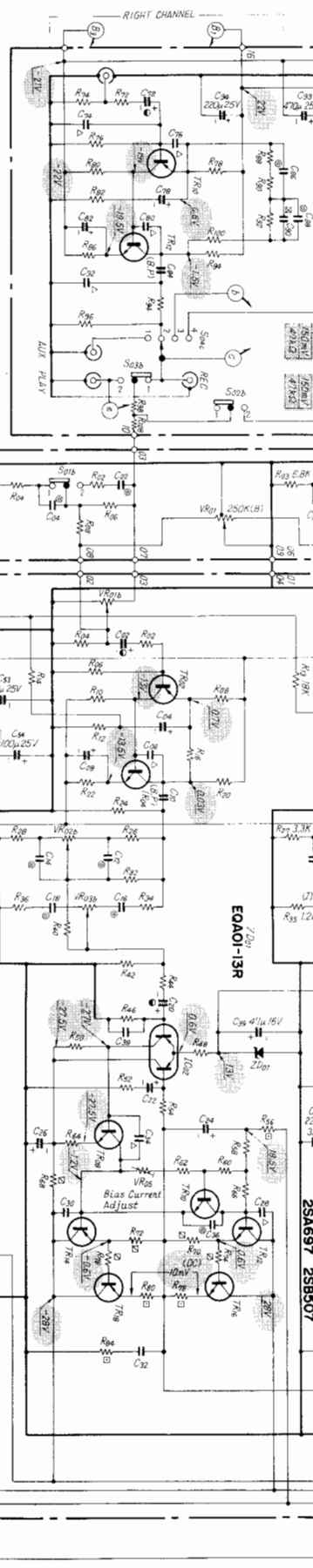
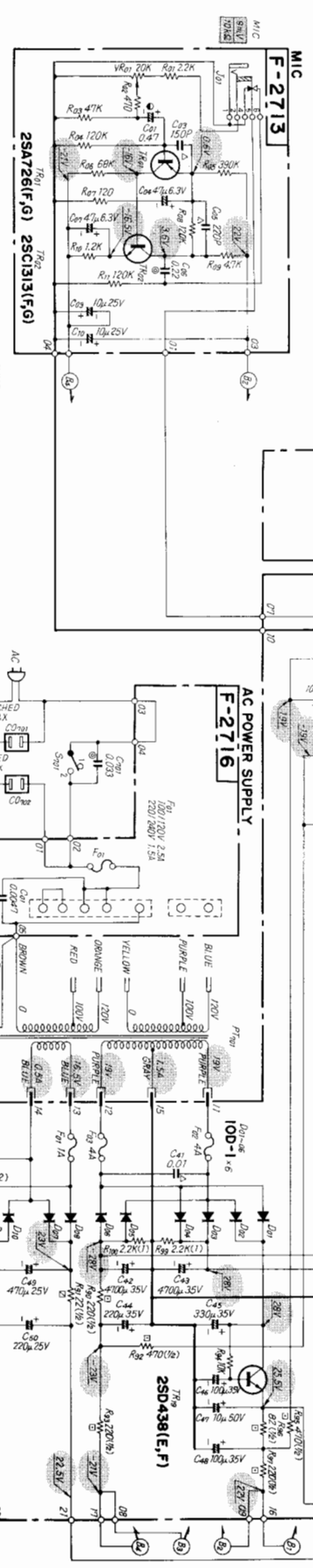
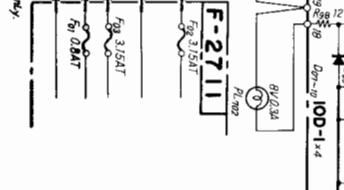
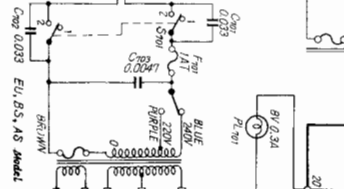
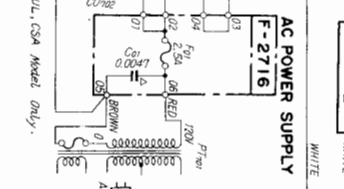
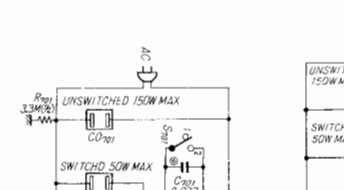
1) G-2000

- SWITCHES & CONTROLS**
- POWER: 1. off, 2. on
 - LOUDNESS: 1. off, 2. on
 - FM MUTING: 1. on, 2. off
 - MODE: 1. stereo, 2. mono
 - TAPE MOTOR: 1. stop, 2. play
 - SELECTOR: 1. data, 2. FM
 - F-2710: 4. AM
- RESISTORS**
- Are in ohms, M = Megs., K = Kilo, W = Watts
 - Unless otherwise noted, K:1/2W, M:1/2W
- CHARACTERS**
- Are in μ , unless otherwise noted P = Pf
- TOLERANCE**
- J = $\pm 5\%$, G = $\pm 2\%$, F = $\pm 1\%$
- Each DC voltage shows the nominal value in volts of no input signal.

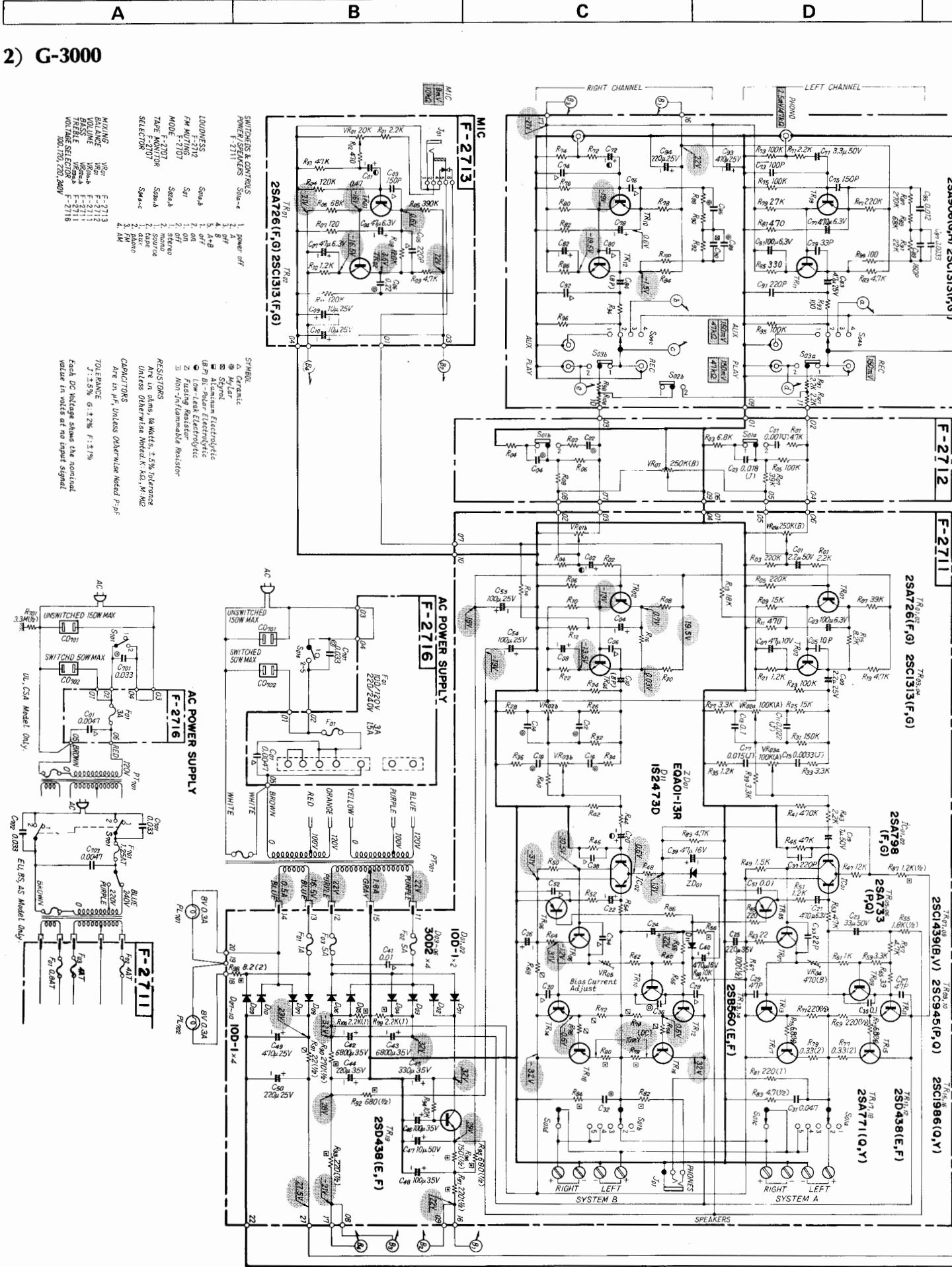
- SWAPABLE**
- ⊗ Ceramic
 - ⊙ Mylar
 - ⊕ Styrofoam
 - ⊖ Aluminum Electrolytic
 - ⊙ Bi-Polar Electrolytic
 - ⊖ Low-Temp. Electrolytic
 - ⊕ Org. Cond.
 - ⊖ Non-Ferrous Metal

- AC POWER SUPPLY**
- UNSWITCHED 150W MAX
 - SWITCHED 50W MAX
- UL, CSA Model Only.

- AC POWER SUPPLY**
- UNSWITCHED 150W MAX
 - SWITCHED 50W MAX
- UL, CSA Model Only.

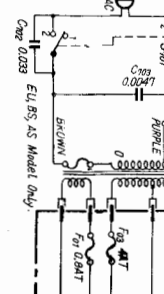
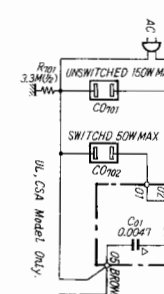


2) G-3000



- SWITCHES & CONTROLS**
- | | | |
|----------|--------|--------------------|
| POWER | F-2713 | 1. power off |
| FM/AM | F-2714 | 1. FM, 2. AM |
| MODE | F-2715 | 1. mono, 2. stereo |
| TAPE | F-2716 | 1. off, 2. source |
| SELECTOR | F-2717 | 1. aux, 2. play |
- ADJUSTMENTS**
- | | | |
|-----------------|--------|-------------------|
| BALANCE | F-2718 | 1. 0.1% tolerance |
| VOLUME | F-2719 | 1. 1.5% tolerance |
| TREBLE | F-2720 | 1. 1.5% tolerance |
| VOLUME SELECTOR | F-2721 | 1. 1.5% tolerance |

- SYMBOLS**
- ⊕ Ceramic
 - ⊖ Spinel
 - ⊙ Aluminum Electrolytic
 - ⊙ Bi-Polar Electrolytic
 - ⊙ Low-leak Electrolytic
 - ⊙ Fusing Resistor
 - ⊙ Non-Flammable Resistor
- RESISTORS**
- Are in ohms, in watts, ±% tolerance unless otherwise noted. K: KΩ, M: MΩ
- CAPACITORS**
- Are in pF, unless otherwise noted. P: pF
- TOLERANCE**
- J: ±5% G: ±2% F: ±1%
- Each DC Voltage shows the nominal value in volts at no input signal.



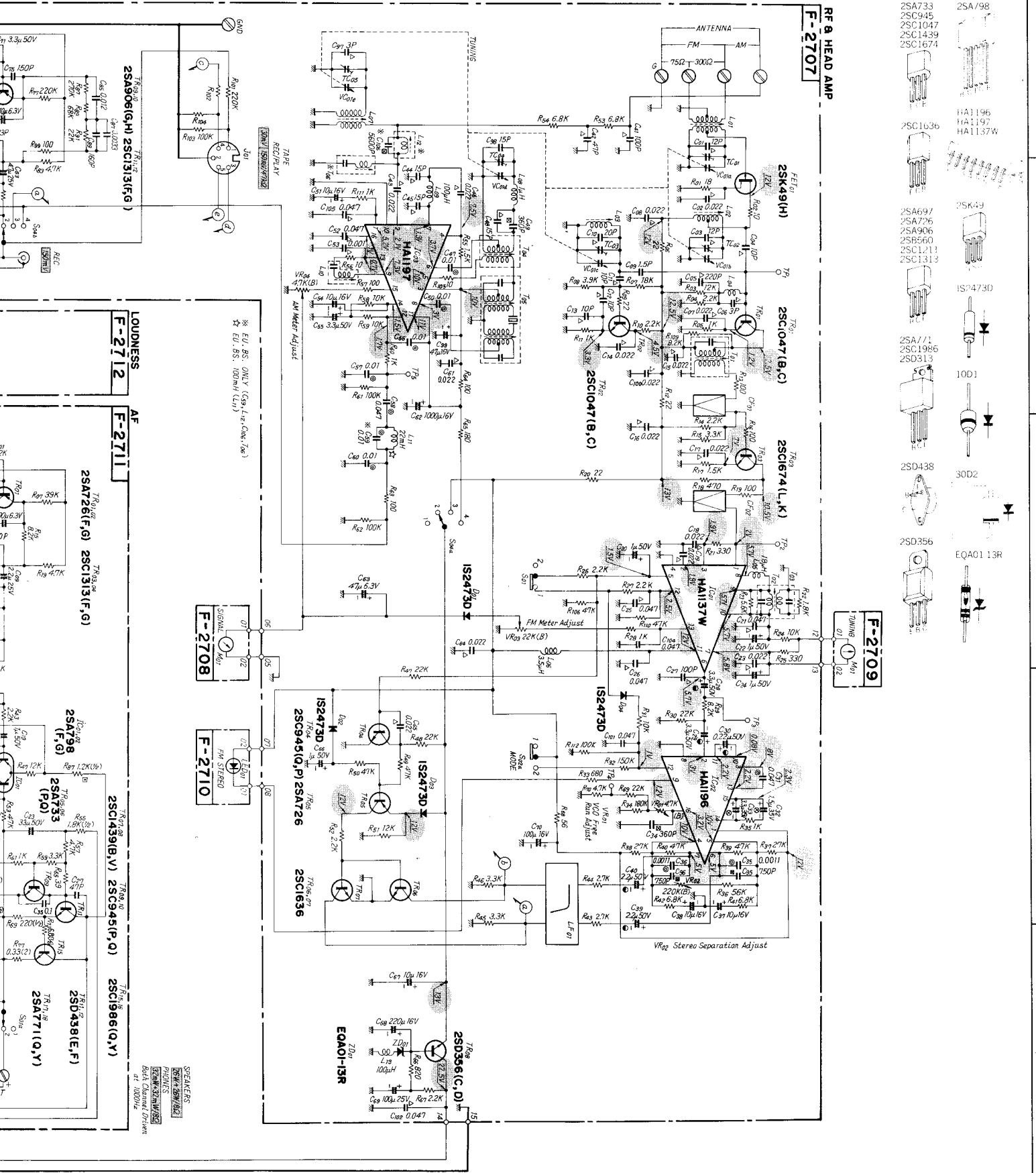
E

F

G

H

CHANNEL



RF & HEAD AMP
F-2707

2SK49(H)

2SC1047(B,C)

2SC1674(L,K)

F-2709

IS24730

IS24730X

IS24730

IS24730

2SA733
2SC945
2SC1047
2SC1439
2SC1674

2SC1636

2SA697
2SA726
2SA906
2SB560
2SC1211
2SC1313

2SA771
2SC1986
2SD313

10D1

2SD438

2SD356

EQAO113R

EQAO113R

EQAO113R

EQAO113R

EQAO113R

EQAO113R

1

2

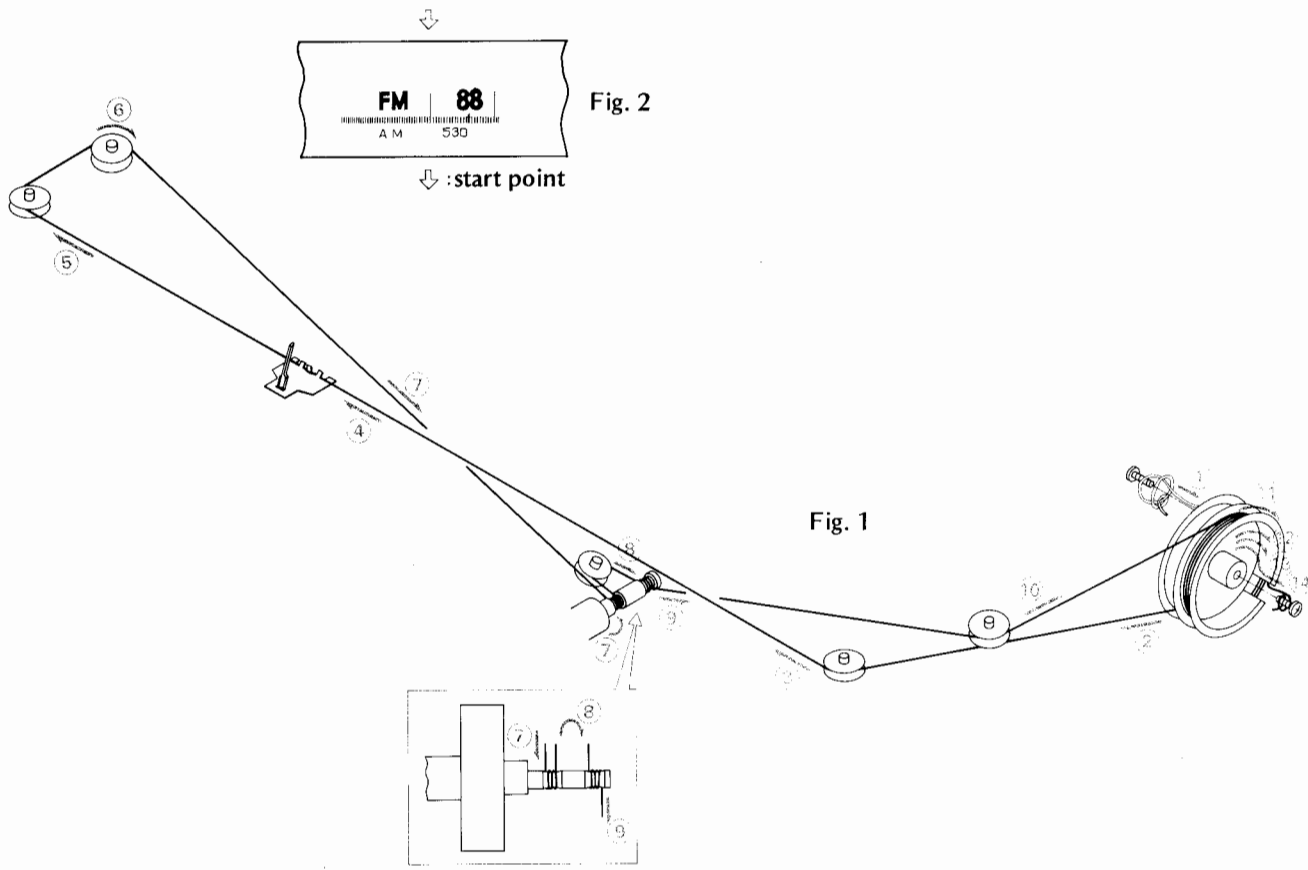
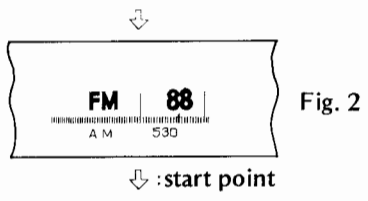
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4

5

8. THREADING OF DIAL CORD

- * If a dial cord is cut off or slips, replace it by following procedures.
As this unit uses 0.5 mm φ cord, please replace it with the same type certainly.
- * The length of dial cord is approximately 160 cm (65.3 inch).



Threading of Dial Cord

Thread the dial cord in numerical order from 1 to 14 as Fig. 1.

- * Close the variable capacitor completely (Maximum Capacitance).

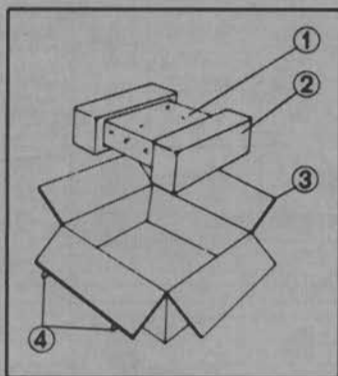
Attachment of Dial Pointer

- 1) Close the variable capacitor completely.
 - 2) Set the dial pointer to start point on dial scale as Fig. 2.
- * Confirm that the dial pointer runs smoothly on the dial scale by turning the turning shaft.

| Stock No. | Description |
|-----------|----------------------|
| 6036050 | Dial Cord (0.5 mm φ) |
| 6146670 | Dial Pulley |

9. PACKING LIST

| Parts No. | Stock No. | Description |
|-----------|-----------|----------------------|
| 1 | 9116143 | Vinyl Cover |
| 2 | 9028090 | Stylofoam Packing |
| 3 | 9009750 | Carton Case (G-2000) |
| | 9009740 | Carton Case (G-3000) |
| 4 | 5996080 | Curl Stopper |



10. ACCESSORY PARTS LIST

| Stock No. | Description |
|-----------|---------------------------------|
| 9202950 | Operating Instructions (G-2000) |
| 9202940 | Operating Instructions (G-3000) |
| 9237590 | Schematic Diagram (G-2000) |
| 9237580 | Schematic Diagram (G-3000) |
| 3820100 | FM Antenna |

MEMO

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