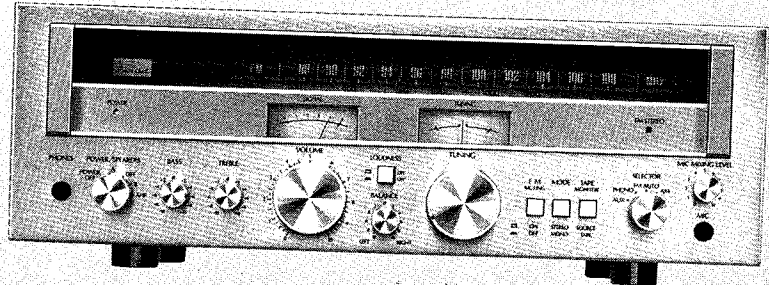


SERVICE MANUAL

668
AM/FM STEREO RECEIVER

SANSUI G-3500/301 G-4500/401



SANSUI ELECTRIC CO., LTD.

SPECIFICATIONS

- G-3500/301**
 Audio section
 Power output
 Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.1% total harmonic distortion.
 26 watts per channel into 8 ohms
 Load impedance 8 ohms
 Total harmonic distortion
 less than 0.1% at or below rated min. RMS power output
 Intermodulation distortion (70 Hz : 7 kHz = 4:1 SMPTE method)
 less than 0.1%
 Frequency response (at 1 watt)
 10 to 50,000 Hz +1 dB -2 dB
 RIAA curve deviation (PHONO)
 +0.5 dB -0.5 dB (30 to 15,000 Hz)
 Damping factor approximately 30 at 8-ohm 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
 MIC 8 mV/10 kilohms
 Output level (1 kHz)
 TAPE REC (pin jack) 150 mV/47 kilohms
 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 95 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 μV)
 DIN 1.2 μV
 Stereo IHF 19.0 dBf
 50 dB Quieting sensitivity
 Mono 15 dBf
 Stereo 38 dBf
 Signal to noise ratio (at 65 dBf)
 Mono 71 dB
 Stereo 68 dB
 Distortion (at 65 dBf)
 Mono less than 0.18% at 100 Hz
 less than 0.15% at 1,000 Hz
 less than 0.25% at 6,000 Hz
 Stereo less than 0.3% at 100 Hz
 less than 0.25% at 1,000 Hz
 less than 0.3% at 6,000 Hz
 Alternate channel selectivity (at 400 kHz)
 50 dB
 Capture ratio 1.3 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 +0.5dB -1.0 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 μV/m)
 Selectivity 35 dB
 Signal to noise ratio 46 dB
 Power requirements
 Power voltage 100, 120, 220, 240 V (50/60 Hz)
 120 V (Usable 110 ~ 130 V)
 60 Hz (for U.S.A. and Canada only)
 Power consumption
 Rated consumption 90 watts 110 VA
 Dimensions 433 mm (17-1/16") W
 153 mm (6-1/16") H
 354 mm (14") D
 Weight 7.5 kg (16.5 lbs) net
 8.9 kg (19.6 lbs) packed

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

to be continued

SPECIFICATIONS

G-4500/401

Audio section

Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.1% total harmonic distortion.

40 watts per channel into 8 ohms

Load impedance 8 ohms

Total harmonic distortion

less than 0.1% at or below rated min. RMS power output

Intermodulation distortion (70 Hz : 7 kHz = 4:1 SMPTE method)

less than 0.1%

Frequency response (at 1 watt)

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

RIAA curve deviation (PHONO)

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

Damping factor approximately 30 at 8-ohm 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

MIC 8 mV/10 kilohms

Output level (1 kHz)

TAPE REC (pin jack) 150 mV/47 kilohms

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 95 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 15 dBf

Stereo 38 dBf

Signal to noise ratio (at 65 dBf)

Mono 71 dB

Stereo 68 dB

Distortion (at 65 dBf)

Mono less than 0.18% at 100 Hz

less than 0.15% at 1,000 Hz

less than 0.25% at 6,000 Hz

Stereo less than 0.3% at 100 Hz

less than 0.25% at 1,000 Hz

less than 0.3% at 6,000 Hz

Alternate channel selectivity (at 400 kHz)

. 50 dB

Capture ratio 1.3 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 -1.0 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 (\pm 10 kHz) 35 dB

Signal to noise ratio 46 dB

Power requirements

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

120 V (Usable 110 ~ 130 V)

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

Power consumption

Rated consumption 115 watts 145 VA

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

153 mm (6-1/16") H

354 mm (14") D

Weight 8.1 kg (17.9 lbs) net

9.5 kg (20.9 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-4500/401 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 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

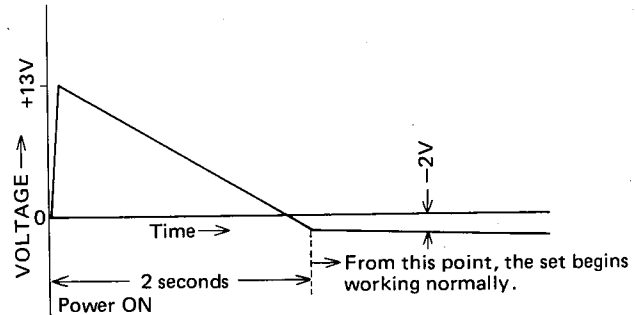
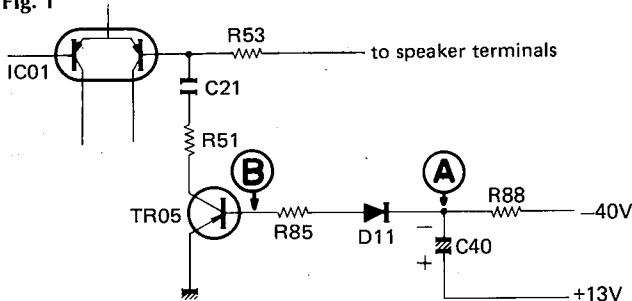


Fig. 2 Voltage variation during a certain period of time at A

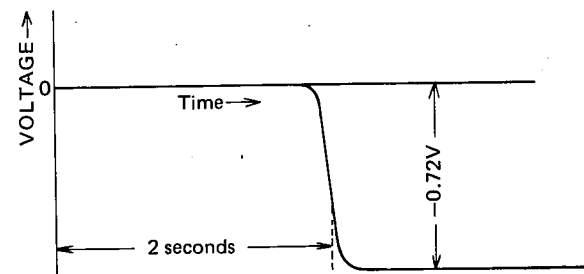
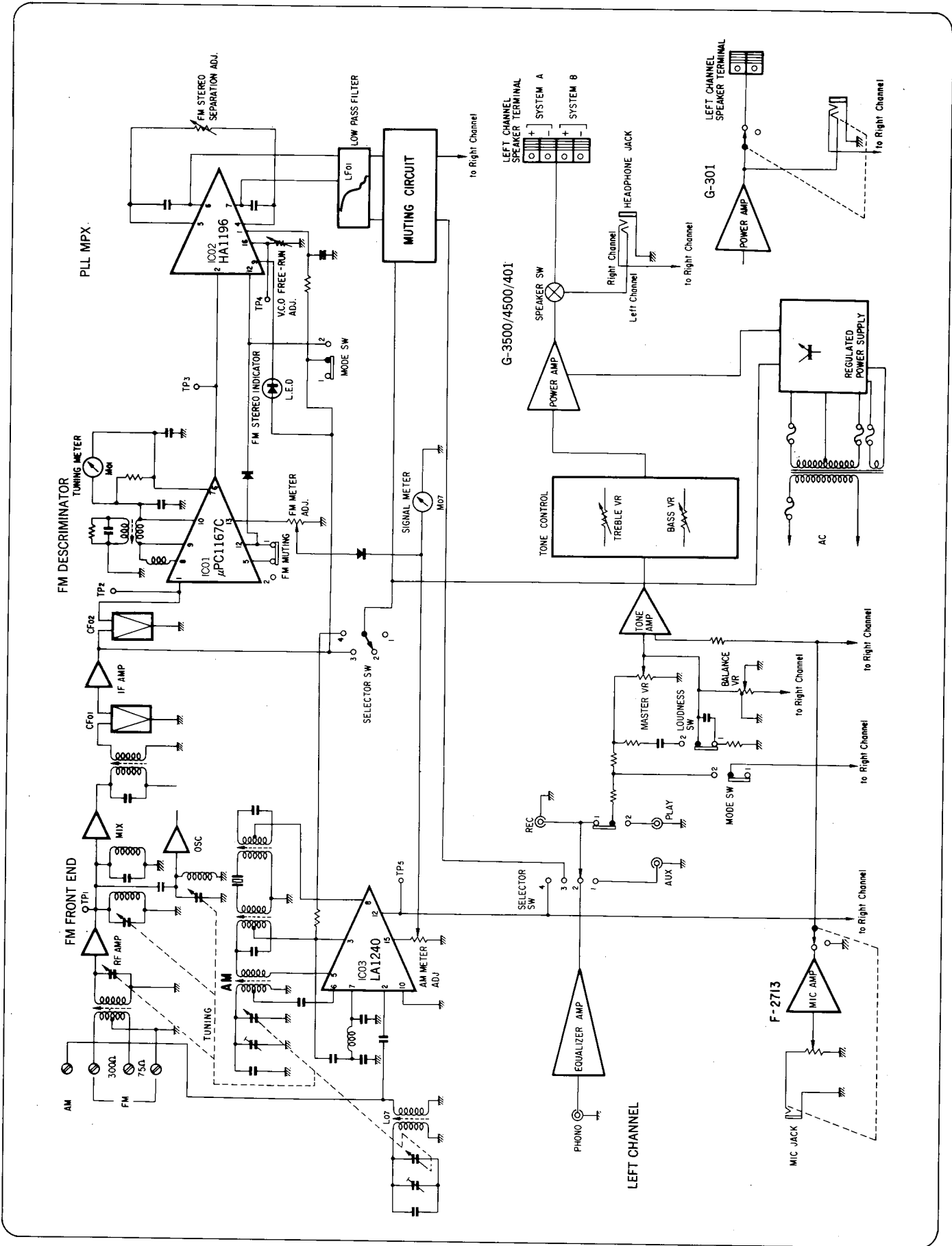


Fig. 3 Voltage variation at B

2. BLOCK DIAGRAM



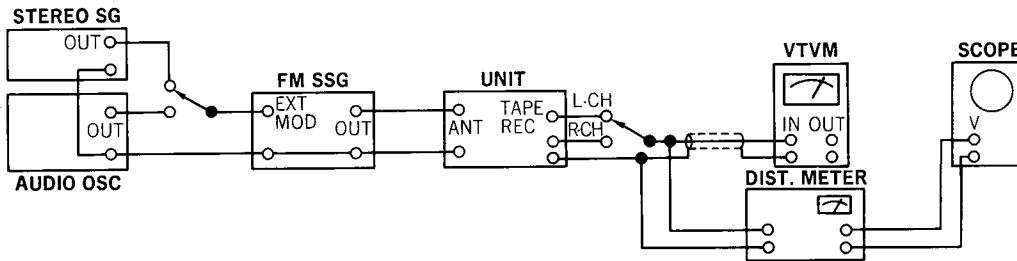
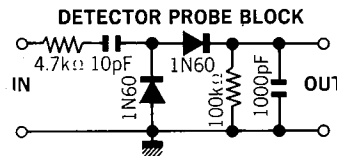
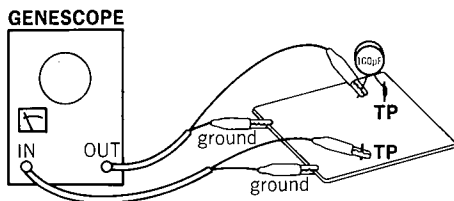
3. ADJUSTMENTS

* Refer to illustration of F-2924 circuit board on next page.

3-1. FM Adjustment

- Note: 1. Selector FM AUTO
 2. FM Muting Switch OFF

3. Connection ... Connect the output of genescope to TP through 100 pF ceramic capacitor.



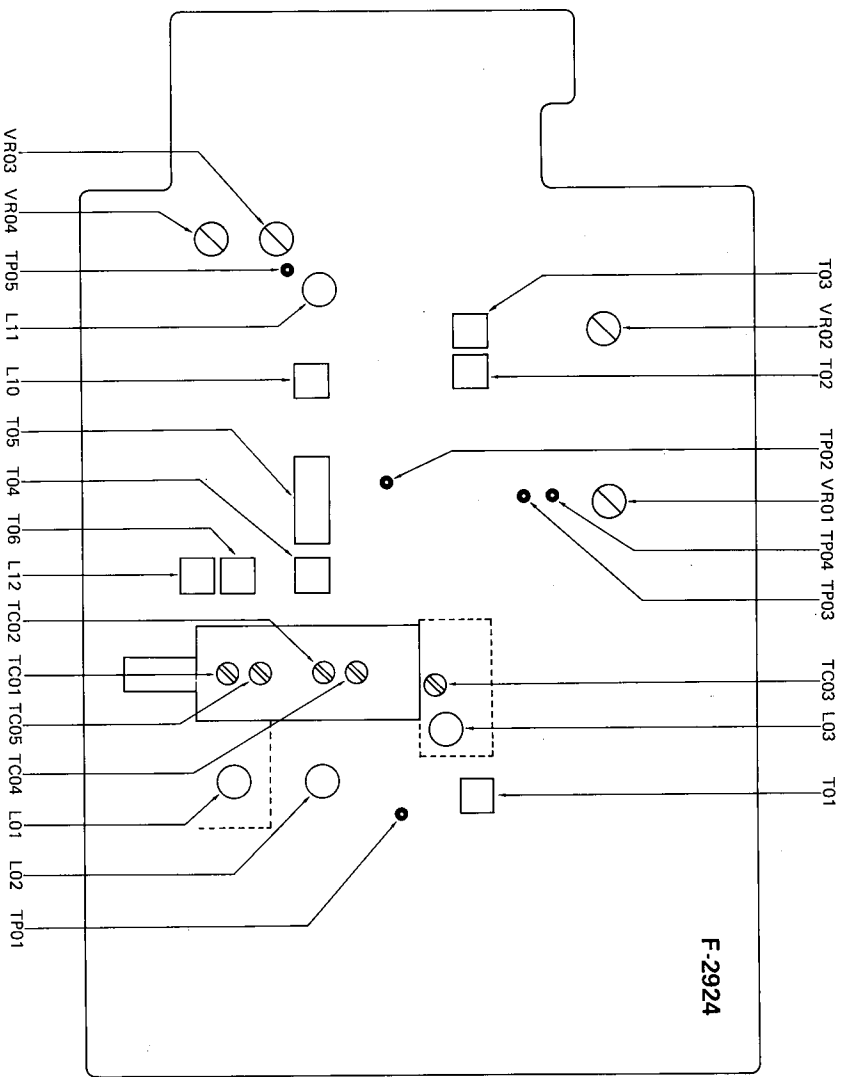
1) FM IF Adjustment & Dial Calibration

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil	Output 80 dB Genescope	TP01 F-2924	TP02 F-2924 Use Detector Probe	T01 F-2924	Max. IF waveform	
2.	Discriminator Coil	Same as above	Same as above	TP03 F-2924	T02, T03 F-2924	Steep linearity of S curve Make symmetrical S curve	
	Discriminator Coil In case of using Dist Meter	98 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	ANT terminal 300Ω	REC terminal Dist Meter	T02, T03 F-2924	Min. T.H.D.	
3.	Tuning Meter	98 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	Same as above	Tuning Meter	T02 F-2924	Center on Meter	
4.	90 MHz Dial Calibration	90 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	Same as above	REC terminal VTVM & Scope	L03 F-2924	Max. indication on Signal meter & Center indication on Tuning meter	
	106 MHz Dial Calibration	106 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	Same as above	Same as above	TC03 F-2924		
5.	90 MHz RF Adj.	90 MHz ANT Input Minimum value with sine wave 1000 Hz (100% MOD) FM SSG	Same as above	Same as above	L01, L02 F-2924	Same as above	
	106 MHz RF Adj.	106 MHz ANT Input Minimum value with sine wave 1000 Hz (100% MOD) FM SSG	Same as above	Same as above	TC01, TC02 F-2924	Same as above	
6.	Signal Meter Volume	98 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	Same as above	Signal Meter	VR03 F-2924	4.3 on Meter	

2) FM STEREO Adjustment

Note: 1. Mode STEREO

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	PLL VCO Adj.	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 KHz (9% MOD) SUB 1 KHz + Pilot (100% MOD) STEREO SG	ANT terminal 300Ω	Stereo indicator	VR01 F-2924	Light indicator	Adjust the VR01 within center of lighting level.
	PLL VCO Adj. In case of using Freq. counter	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG No mode	Same as above	TP04 F-2924 Use Freq. counter	VR01 F-2924	76 KHz ± 1.50 Hz	
2.	Separation	98 MHz ANT Input 65 dBf (59.8 dB) FM SSG Pilot 19 KHz (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-2924	Set -34 dB	Confirm separation L-CH → R-CH (-34 dB)



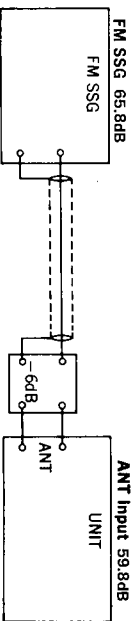
* NEW MEASUREMENT FOR FM

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 FMSG (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.

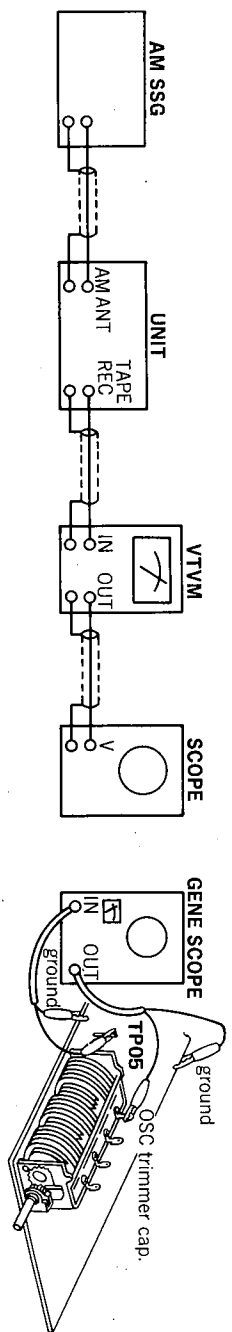
	modulation frequency	modulation mode	modulation factor
FM MONO	1000 Hz		100%
FM STEREO	1000 Hz	SUB	Pilot 9% Pilot + SUB 100%

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



3-2. AM IF Adjustment & Dial Calibration

Note: 1. Selector AM



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil	Genescope Output level 70 dB	TC04 F-2924	TP05 F-2924	T05 L10 F-2924	Max. IF waveform	
2.	600 KHz Dial Calibration	600 KHz ANT Input 60 dB 400 Hz (MOD 30%) AM SSG	AM ANT terminal	REC terminal L or R-CH VTVM & Scope	T04 F-2924	Max. indication on signal meter	
3.	600 KHz RF Adj.	600 KHz ANT Input 50 dB 400 Hz (MOD 30%) AM SSG	Same as above	Same as above	TC04 F-2924	Same as above	
4.	1400 Hz RF Adj.	1400 KHz ANT Input 50 dB 400 Hz (MOD 30%) AM SSG	Same as above	Same as above	TC05 F-2924	Same as above	
	Signal Meter	1000 KHz ANT Input 80 dB 400 Hz (MOD 30%) AM SSG	Same as above	Signal Meter	VR04 F-2924	4.5 on meter	

3-3. Bias Current Adjustment (See the Picture of Top View on page 8)

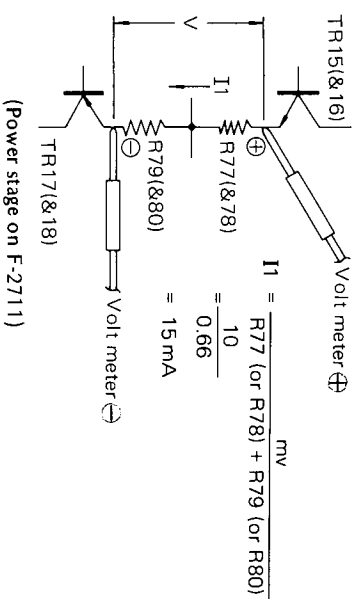
1. Confirm AC power supply voltage (100 V, 120 V, 220 V or 240 V).

2. Master 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, measure the voltage between the lead + (plus) side of R77 (R78) and the lead - (minus) side of R79 (R80) on both channels.



$$I1 = \frac{R77 \text{ (or R78)} + R79 \text{ (or R80)}}{10} = \frac{10}{0.66} = 15 \text{ mA}$$

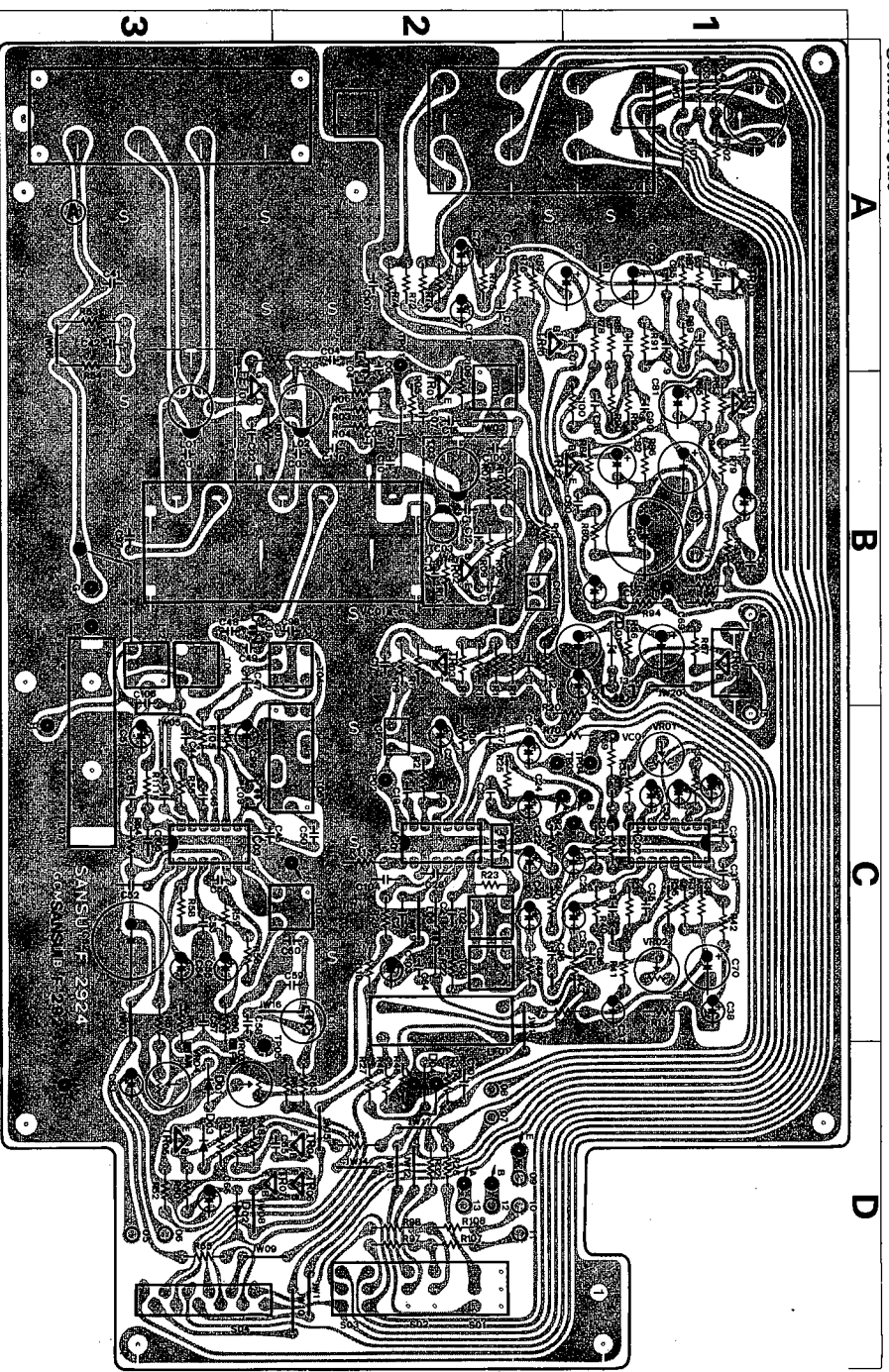
STEP	SUBJECT	EQUIPMENT	MEASURE OUTPUT	ADJUST	ADJUST FOR
1	Bias Current L-CH	DC Volt meter	* See above	VR04 F-2711	10 mV ± 1 mV (15 mA)
2	Bias Current R-CH	DC Volt meter	* See above	VR05 F-2711	10 mV ± 1 mV (15 mA)

4. PARTS LOCATION & PARTS LIST

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.

4-1. F-2924 AM/FM Tuner & FM MPX Circuit Board (Stock No. 7521861)

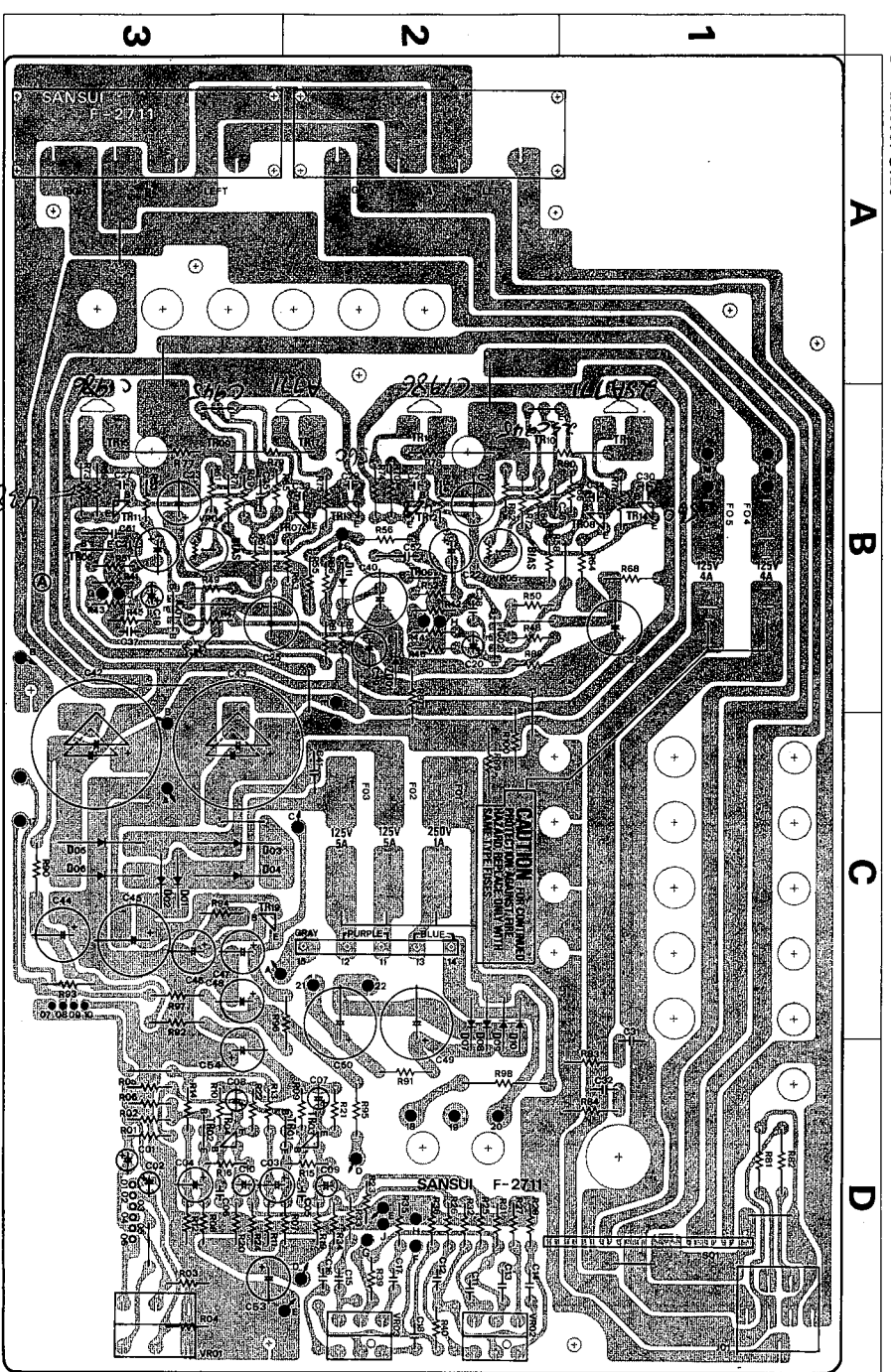
Conductor Side



Parts No.	Stock No.	Description	Position
•Transistors			
TR01, 02	0306501, 2	2SC1047 B, C	2B
TR03	0306541, 2	2SC1674 L, K	2B
TR04	0306551, 2	2SC945 D, P	2C
TR05	0300470	2SA728W F	2D
TR06, 07	0306581, 2	2SC1634	3D
TR08	0306450, 1	2SD356 C, D	1B
TR09, 10	0300900, 1	2SA906 G, H	1A, 2A
TR11, 12	0306070, 1	2SC1313 F, G	1B
•ICs			
IC 01	0360750	μPC1167C	2C
IC 02	0360320	HA1196	1C
IC 03	0360800	LA1240	3C
•FET			
FT01	0370172	2SK49 (H)	3B
•Diodes			
D 01 ~ 04	0311160	1S2473D	3D, 2D
•Zener Diodes			
ZD01	0315970	EQA01-13R	1B
C 01 ~ 03	0669347	120F 50V C.C.	2B, 2B
C 04	0669210	100F 50V C.C.	2A
C 05	0669303	30F 50V C.C.	2A
C 06	0669303	30F 50V C.C.	2B
C 07	0679012	1.50F 500V	2B
C 08	0669355	Gimnick Capacitor	2B
C 09	0669210	200F 50V C.C.	2B
C 10	0669210	100F 50V C.C.	2B
C 11, 13	0573159	1.5μF 35WV T.C.	1C
C 12	0573339	3.3μF 35WV T.C.	1C
C 14	0629005	360pF 50V P.C.	1C
C 15	0629005	300pF 50V P.C.	1C
C 16	0620301	160pF 50V P.C.	1A, 1B
C 17	0620161	560pF 50V P.C.	1C, 2C
C 18	0620161	560pF 50V P.C.	1C, 2C
C 19	0669563	30F 50V C.C.	2B
C 20	0669400	150F 50V C.C.	2B
C 21	4200720	Antenna Coil (FM)	2B
C 22	4210340	RF Coil	2B
L 01	4220400	O.S.C. Coil	2B
L 02	4600140	1μH Inductor Coil	2A, B
L 03	4290330	18μH Inductor Coil	2C
L 04	4290330	18μH Inductor Coil	2C
L 05	4290330	18μH Inductor Coil	2C
L 06	4290330	18μH Inductor Coil	2C
L 07	4290330	18μH Inductor Coil	2C
L 08	4290330	18μH Inductor Coil	2C
L 09	4290330	18μH Inductor Coil	2C
L 10	4290330	18μH Inductor Coil	2C
L 11	4290330	18μH Inductor Coil	2C
L 12	4290330	18μH Inductor Coil	2C
L 13	4290330	18μH Inductor Coil	2C
T 01	4235930	IF Coil (FM)	2B
T 02	4235990, 1	IF Coil	2B
T 03	4236000, 1	IF Coil	2C
T 04	4220650	OSC Coil (AM)	2C
T 05	0910370	Ceramic Filter (AM)	2B
T 06	4230620	IF Coil	3B
CF 01, 02	0910380	Ceramic Filter (FM)	2B, 2C
LF 01	0910220	Low Pass Filter	2C
VR01	1034250	4.7kΩ (B) VCO Fine-Run	1C
VR02	1035210	Adjusting VR	1C
VR03	1035150	22kΩ (B) Stereo Separation	1C
VR04	1035110	Adjusting VR	3C, D
VR05	1035110	Adjusting VR	3D
VR06	1035110	Adjusting VR	3D
S 01	1131060, 1	Push Switch, FM muting	2D
S 02	1101840	Rotary Switch, selector	2D
VC01	1220210	AM FM Variable Capacitor	2B
TC03	1230090	Trimmer Capacitor	2B
SP DIN Socket	2090030	SP DIN Socket	1A
4P Antenna Terminal	2210330	4P Antenna Terminal	
Ground Terminal	2230180	Ground Terminal	
8P Input Terminal	2200410, 1	8P Input Terminal	

4-2. F-2711 Pre/Main & Power Supply Circuit Board (Stock No. 7572141/G-3500) (Stock No. 7572081/G-301) (Stock No. 7572151/G-4500) (Stock No. 7572131/G-401)

Conductor Side

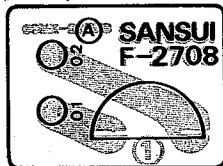


Parts No.	Stock No.	Description	Position
•Transistors			
TR01, 02	0300470, 1	2SA728W F, G	2D, 3D
TR03, 04	0306070, 1	2SC1313 F, G	2D, 3D
TR05, 06	0306521, 2	2SC1439 B, V	2B, 1B
TR07, 08	0306551, 2	2SC945 D, P	3B, 2B
TR09, 10	0306581, 2	2SD438 E, F	3B, 2B
TR11, 12	0306581, 2	2SD438 E, F	2B, 1B
TR13, 14	0306541, 2	2SC1986 Q, Y	3B, 2B
TR15, 16	0306541, 2	2SC1986 Q, Y	2B, 1B
TR17, 18	0300911, 2	2SA771 Q, Y	2B, 1B
TR19	0306521, 2	2SD438 E, F	3C
•ICs			
IC 01, 02	0360290, 1	2SA798 E, F	3B, 2B
•Diodes			
D 01, 02	0310340	10D1	3C
D 03 ~ 06	0311530	30D2	3C
D 07 ~ 10	0310340	10D1	2C
•Zener Diode			
ZD01	0315970	EQA01-13R	2B
C 41	0665103	10,000μF 500V C.C.	2C
R 55, 56	0210182	1.8kΩ 1/4W N.I.R.	2B
R 67, 68	0192101	1000Ω 1/4W F.R.	3B, 1B
R 69 ~ 72	0192221	2200Ω 1/4W F.R.	3B, 2B
R 73 ~ 76	0192689	6.8kΩ 1/4W F.R.	1, 2B
R 77 ~ 80	0212358	0.33kΩ 2W N.I.R.	1D
R 81, 82	0211221	220Ω 1W N.I.R.	1D
R 83, 84	0210479	4.7kΩ 1/4W N.I.R.	1D
R 91	0192220	22kΩ 1/4W F.R.	2D
VR01	1011130, 1	250kΩ (B) x 2 Level Volume	3D
VR02	1015300, 1	100kΩ x 2 Bass Volume	2D
VR03	1015300, 1	100kΩ x 2 Treble Volume	2D
VR04, 05	1038050	470Ω Volume, bias current	2D
F 01	0432220	1A, 250V Fuse Holder (Large)	
	2310220	Fuse Holder (Large)	
	2210340	4P Outlet Terminal	
<G-3500/301>	0548009	6.800μF 35V E.C.	2B
R 87	0210182	1.8kΩ 1/4W N.I.R.	3C
R 90	0210271	270Ω 1/4W N.I.R.	3C
R 92	0210681	680Ω 1/4W N.I.R.	3C
R 93	0210331	330Ω 1/4W N.I.R.	3C
R 95	0210681	680Ω 1/4W N.I.R.	2D
R 96	0210151	150Ω 1/4W N.I.R.	2C
R 97	0210271	270Ω 1/4W N.I.R.	2C
R 99, 100	0211222	2.2kΩ 1W N.I.R.	2C
F 02, 03	0432290	5A 125V AC Fuse	2C
<G-4500/401>			
•Transistors			
TR05, 06	0300510, 1	2SA733 P, Q	3B, 2B
•Diodes			
D 11	0311160	1S2473D	2B
C 42, 43	0649116	6.800μF 50V E.C.	2B
R 87	0210222	2.2kΩ 1/4W N.I.R.	2B
R 90	0210471	470Ω 1/4W N.I.R.	3C
R 92	0210102	1kΩ 1/4W N.I.R.	3C
R 93	0210681	680Ω 1/4W N.I.R.	3C
R 95	0210102	1kΩ 1/4W N.I.R.	2D
R 96	0210271	270Ω 1/4W N.I.R.	2C
R 97	0210681	680Ω 1/4W N.I.R.	2C
R 99, 100	0211272	2.7kΩ 1W N.I.R.	2C
F 02, 03	0432500	7A 125V Fuse	2C
<G-3500/4500/401>			
S 01	1101850	SP Selector Switch	1D
J 01	2430320	Headphone Jack Socket	
<G-301>	2430340	Headphone Jack Socket	

* The circuit boards, F-2708, F-2709, F-2710, F-2712, F-2713 and F-2716 are not supplied as the assembled, the individual parts on the circuit boards, however, are provided for orders.

4-3. F-2708 Circuit Board for Signal Meter

Conductor Side

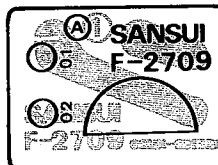


Parts List

Parts No.	Stock No.	Description
M01	4301230, 1	Signal Meter

4-4. F-2709 Circuit Board for Tuning Meter

Conductor Side

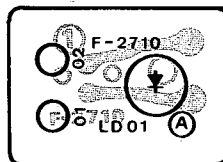


Parts List

Parts No.	Stock No.	Description
M02	4301240, 1	Tuning Meter

4-5. F-2710 Circuit Board for Stereo Indicator

Conductor Side

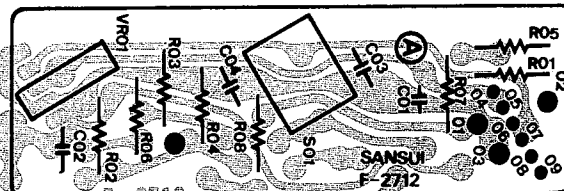


Parts List

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

4-6. F-2712 Loudness Circuit Board

Conductor Side

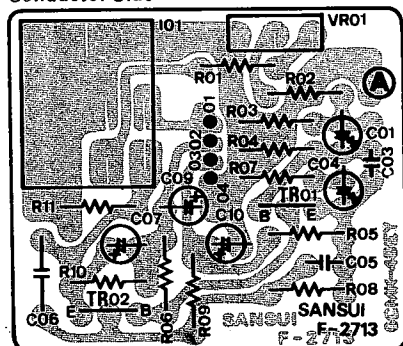


Parts List

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

4-7. F-2713 Microphone Amp Circuit Board

Conductor Side

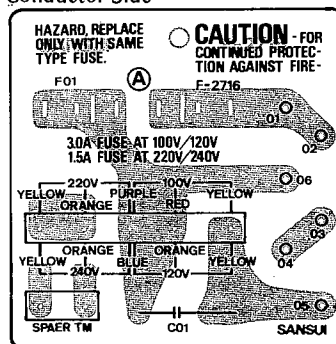


Parts List

Parts No.	Stock No.	Description
• Transistors		
TR01	0300470, 1	2SA726W F, G
TR02	0306070, 1	2SC1313 F, G
VR01	1005340, 1	20kΩ (A) Mixing Volume
J 01	2430330	Mic. Jack Socket

4-8. F-2716 Voltage Selector Circuit Board

Conductor Side



Parts List

Parts No.	Stock No.	Description
C 01	0659802	0.0047μF 150V C.C.
F 01	0432230	1.5A 250V
	0432260	3A 250V
	0432250	2.5A 250V
	0432290	5A 125V
F 881	0435110	1.25A 250V EU, BS G-301
	0435130	2A 250V EU, BS G-401
	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

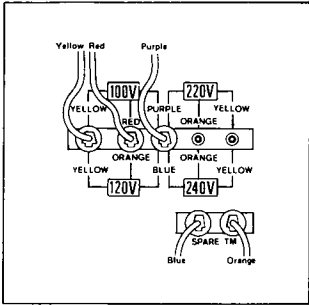
NOTE:

◆ **Changing Power Supply Voltage:** (This is applicable for universal type).

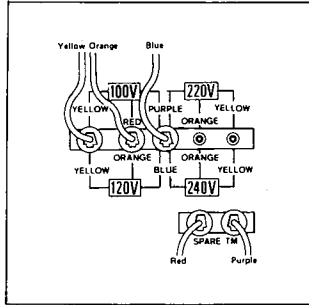
Your unit is adjusted to operate at the correct power supply voltage of your area prior to shipment from our factory. If you move to an outside country after purchasing it or send it as a gift to a friend living in an area where the voltage is different, it may be necessary to operate at the correct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

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

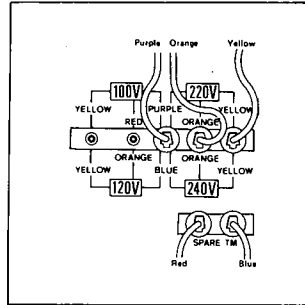
1) For 100V



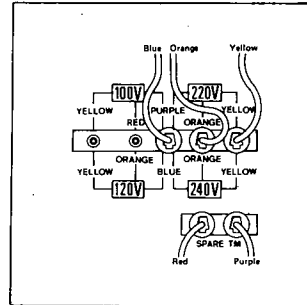
2) For 120V



3) For 220V



4) For 240V



5. PARTS REPLACEMENT

5-1. 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.

5-2. 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

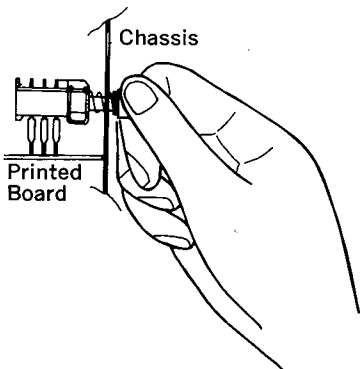


Fig. 2

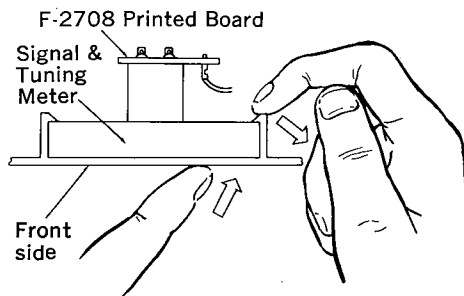
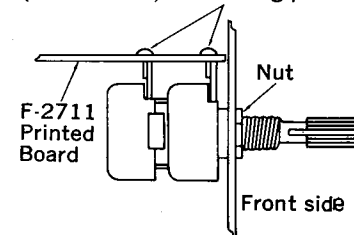


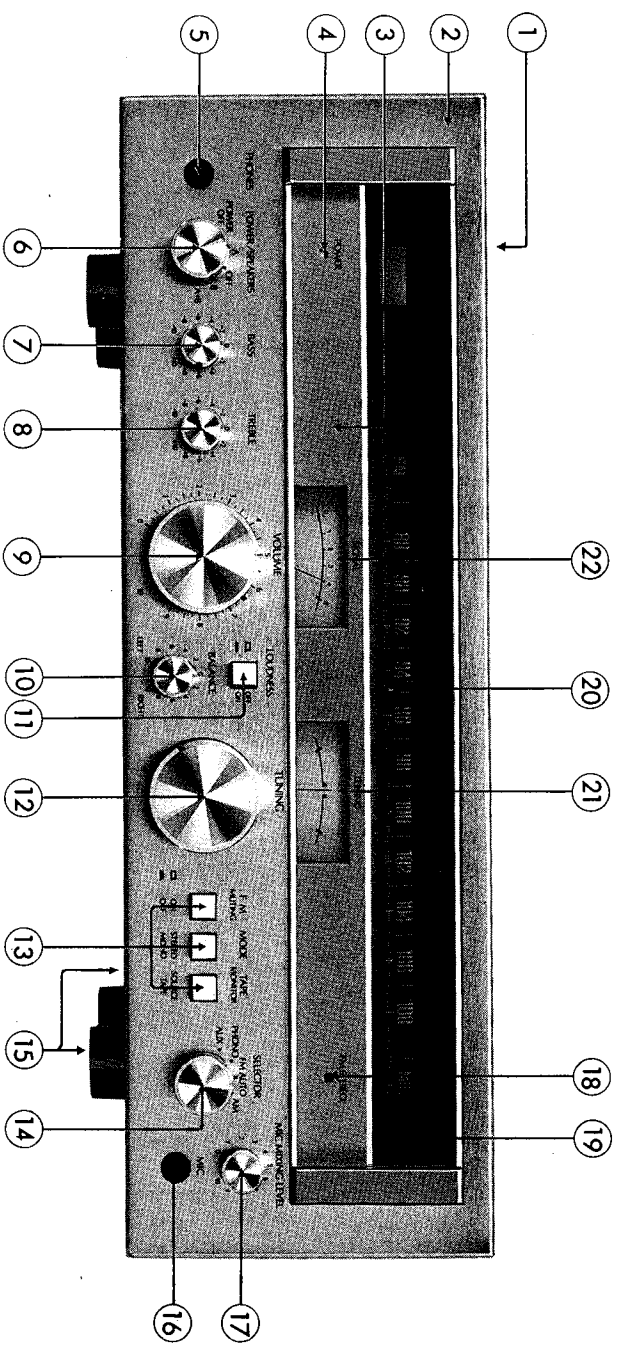
Fig. 3 Level Volume

(Bottom side) Soldering points



6. OTHER PARTS

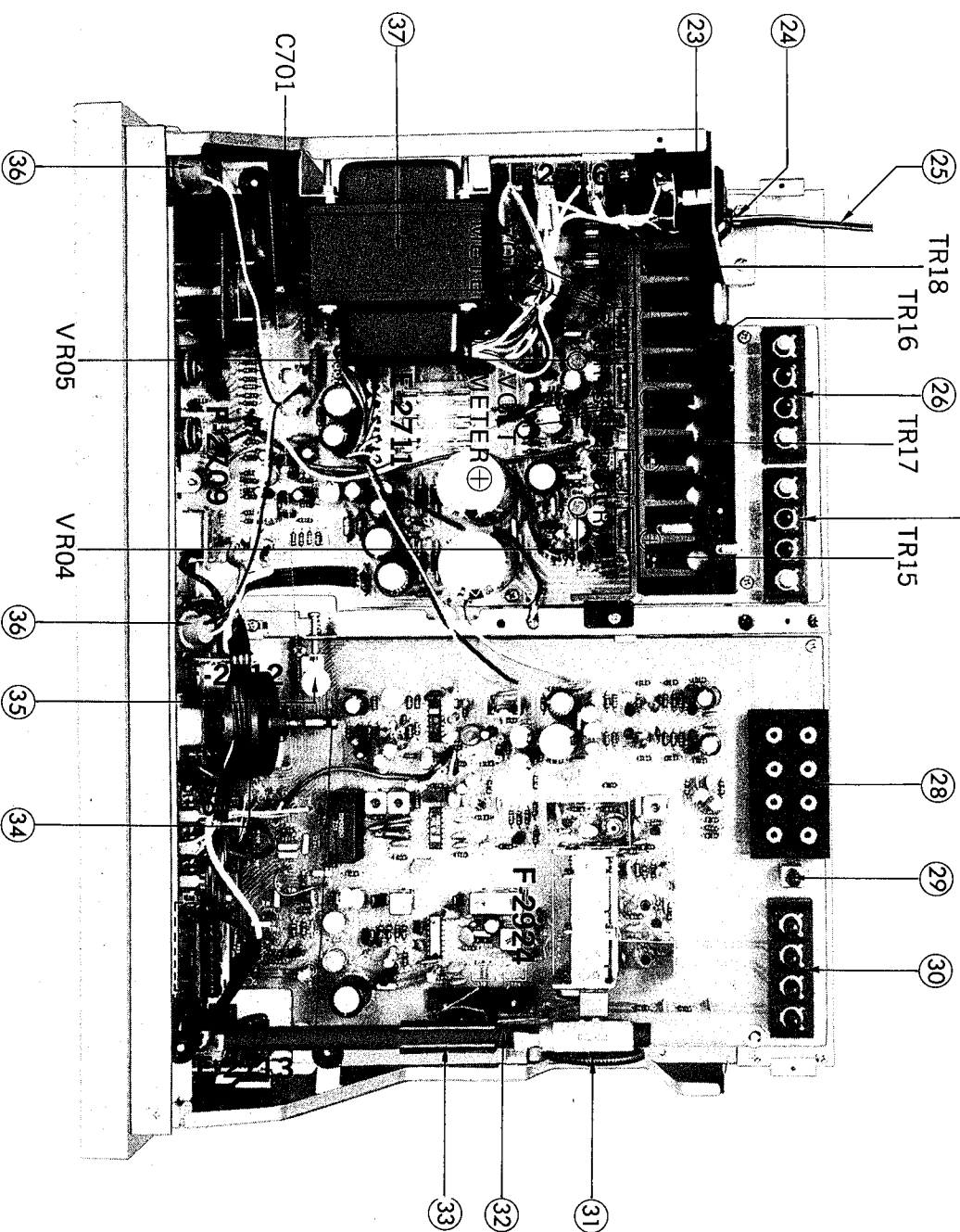
6-1. Front View



Parts List (Front & Top View)

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
1	{ 5727150 5236690 7007631 7008001 7008011	Wood Bonnet W.B. Type Bushing Front Panel Ass'y (G-3500/4500) Front Panel Ass'y (G-301) Front Panel Ass'y (G-401)	19	{ 5408562 5408502 5408572 5408512	Dial Scale (G-3500) Dial Scale (G-301) Dial Scale (G-4500) Dial Scale (G-401)
2	5305690	Inside Panel	20	5305720	Backside Panel for dial scale
3	5426410	Power Illuminator Bar	21	7116032	Dial Pointer Ass'y
4	2430320	Headphone Jack Socket (G-3500/4500/401)	22	4301120, 1	Tuning Meter
5	2430340	Headphone Jack Socket (G-301)	23	4301110, 1	Signal Meter
6	{ 5319142 1190530 1101850	Power & Speakers Switch Knob Power Rotary Switch (G-301) Power & Speaker Rotary Switch (G-3500/4500/401)	24	3910600	AC Outlet
7	5236470	M9 x 7, spacer nut	25	3800470, 1	AC Cord
8	{ 5319133 1015300, 1 5319133 1015300, 1	BASS Volume Knob 100kΩ x 2 Bass Volume Treble Volume Knob 100kΩ x 2 Treble Volume	26	2210340	4P Speaker Terminal
9	{ 5318981 1011130, 1 5319133 1005350, 1	Volume Knob 250kΩ (B) x 2 Volume Balance Volume Knob 250kΩ (B) Balance Volume	28	2200410, 1	8P Input Terminal
10	{ 5326690 1131490, 1 5318972	Loudness Switch Loudness Switch Tuning Knob	29	2230180	Ground Terminal
11	5326690	Tuning Knob	30	2210330	4P Antenna Terminal
12	{ 5326690 1131060, 1 5319142	Knob, tape monitor switch Tape Monitor Switch Selector Switch Knob	31	6146670	D-44 Type Pulley
13	{ 5319142 1101840 5236470	Selector Switch Selector Switch M9 x 7, spacer nut	32	4200750	Bar Antenna
14	{ 5058793 5517250	Bottom Plate Leg	33	5289171	Bar Antenna Holder
15	2430370	Microphone Jack Socket	34	7036590	Tension Unit
16	5319133	Microphone Mixing Volume Knob	35	7136101	Pilot Lamp Ass'y
17	{ 1005340, 1 0319060 5289180	20kΩ (A) Mic Mixing Volume L.E.D., FM Stereo Indicator L.E.D. Holder	36	0400650	Power Transformer (G-3500)
18	5136030	Plastic Rivet	37	{ 4002880 4002884 4002870 4002874	Power Transformer (G-301) Power Transformer (G-4500) Power Transformer (G-401)
			TR15, 16	0306541, 2	2SC1986 (Q, Y) Transistor
			TR17, 18	0300911, 2	2SA771 (Q, Y) Transistor
			C 701	5288721	Plate for TR
				0659801	0.01μF 150V C.C. XX, UL
				0598107	0.01μF 250V M.C. EU, BS
				0659811	0.01μF 125V C.C. CS

6-2. Top View



G-3500/4500/401 Only

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 mmφ cord, please replace it with the same type certainly.
- * The length of dial cord is approximately 160 cm (65.3 inch).

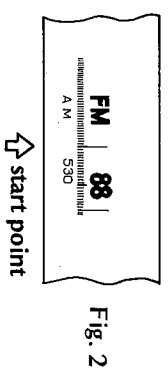


Fig. 2

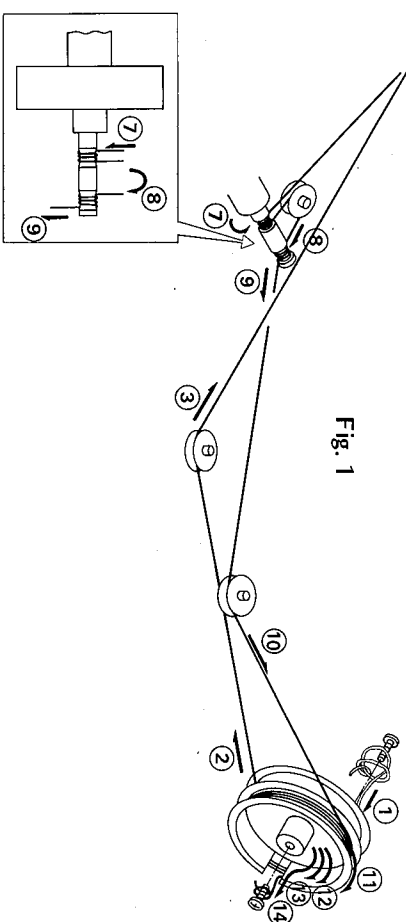


Fig. 1

8-1. 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).

Stock No.	Description
6036050	Dial Cord (0.5 mmφ)
6146670	Dial Pulley

8-2. Attachment of Dial Pointer

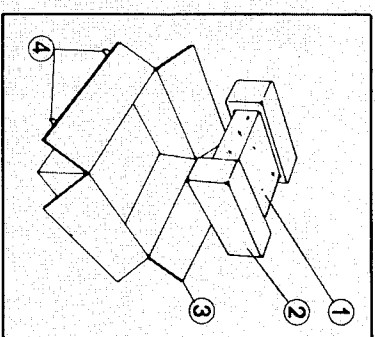
- Close the variable capacitor completely.
- Set the dial pointer to start point on dial scale as Fig. 2.
- * Confirm that the dial pointer runs smoothly on the dial scale by turning the turning shaft.

9. PACKING LIST

Parts No.	Stock No.	Description
1	9116143	Vinyl Cover
2	9028090	Styrofoam Packing
3	9001500	Carton Case (G-3500)
	9001410	Carton Case (G-301)
	9001490	Carton Case (G-4500)
	9001400	Carton Case (G-401)
4	5996080	Curl Stopper

10. ACCESSORY PARTS LIST

Stock No.	Description
9204390	Operating Instructions (G-3500/4500)
9204290	Operating Instructions (G-301)
9204280	Operating Instructions (G-401)
9237860	Schematic Diagram (G-3500/301)
9237950	Schematic Diagram (G-4500/401)
3820100	FM Antenna



MEMO

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