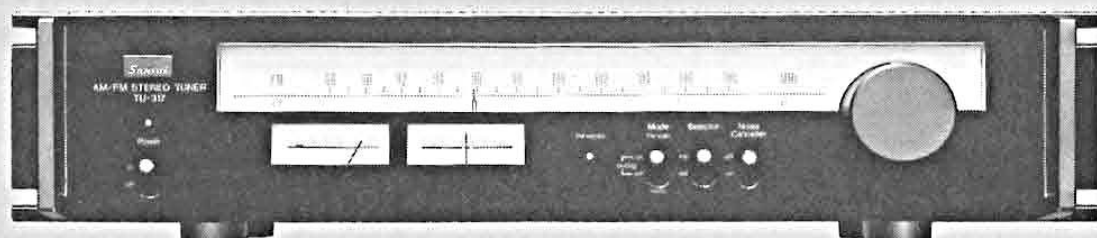


SERVICE MANUAL

AM/FM STEREO TUNER SANSUI TU-317



SPECIFICATIONS

FM Section

Tuning range 88 to 108 MHz

Usable Sensitivity

Mono IHF 10.3 dBf (1.8 μ V: T100)

DIN 1.0 μ V

Stereo IHF 19.0 dBf

50 dB Quieting Sensitivity

Mono 13.5 dBf

Stereo 36.5 dBf

Signal to noise ratio at 65 dBf

Mono 79 dB

Stereo 73 dB

Distortion (at 65 dBf)

Mono less than 0.07 % at 1,000 Hz

Stereo less than 0.09 % at 1,000 Hz

Alternate channel selectivity (at 400 kHz)

. 50 dB

Capture ratio 1.0 dB

Image response ratio . . . 55 dB (at 98 MHz)

Spurious response ratio . 83 dB (at 98 MHz)

Stereo separation 35 dB at 100 Hz

40 dB at 1,000 Hz

30 dB at 10,000 Hz

Frequency response . . . 30 to 15,000 Hz

+0.5 dB -1 dB

Antenna input impedance

. 300 ohms balanced

75 ohms unbalanced

AM Section

Tuning range 530 to 1,600 kHz

Usable sensitivity (Bar antenna)

. 47 dB/m (220 μ V/m)

Selectivity (± 10 kHz) . . 35 dB

Signal to noise ratio . . . 48 dB

Others

Output level 0.7 V

Power requirements . . . 100, 120, 220, 240 V 50/60 Hz

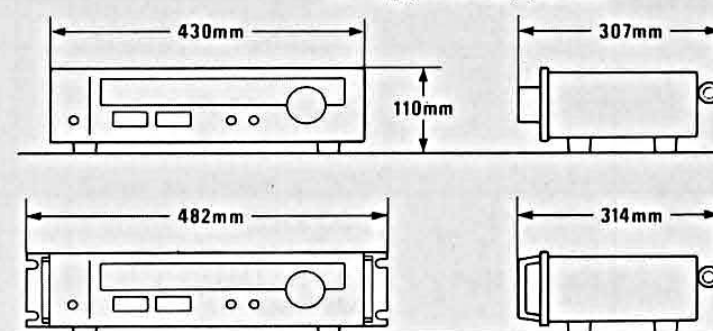
For U.S.A. and Canada

. 120 V (60 Hz)

Power consumption . . . 15 W

Weight 5.5 kg (12.1 lbs) net

6.7 kg (14.8 lbs) packed

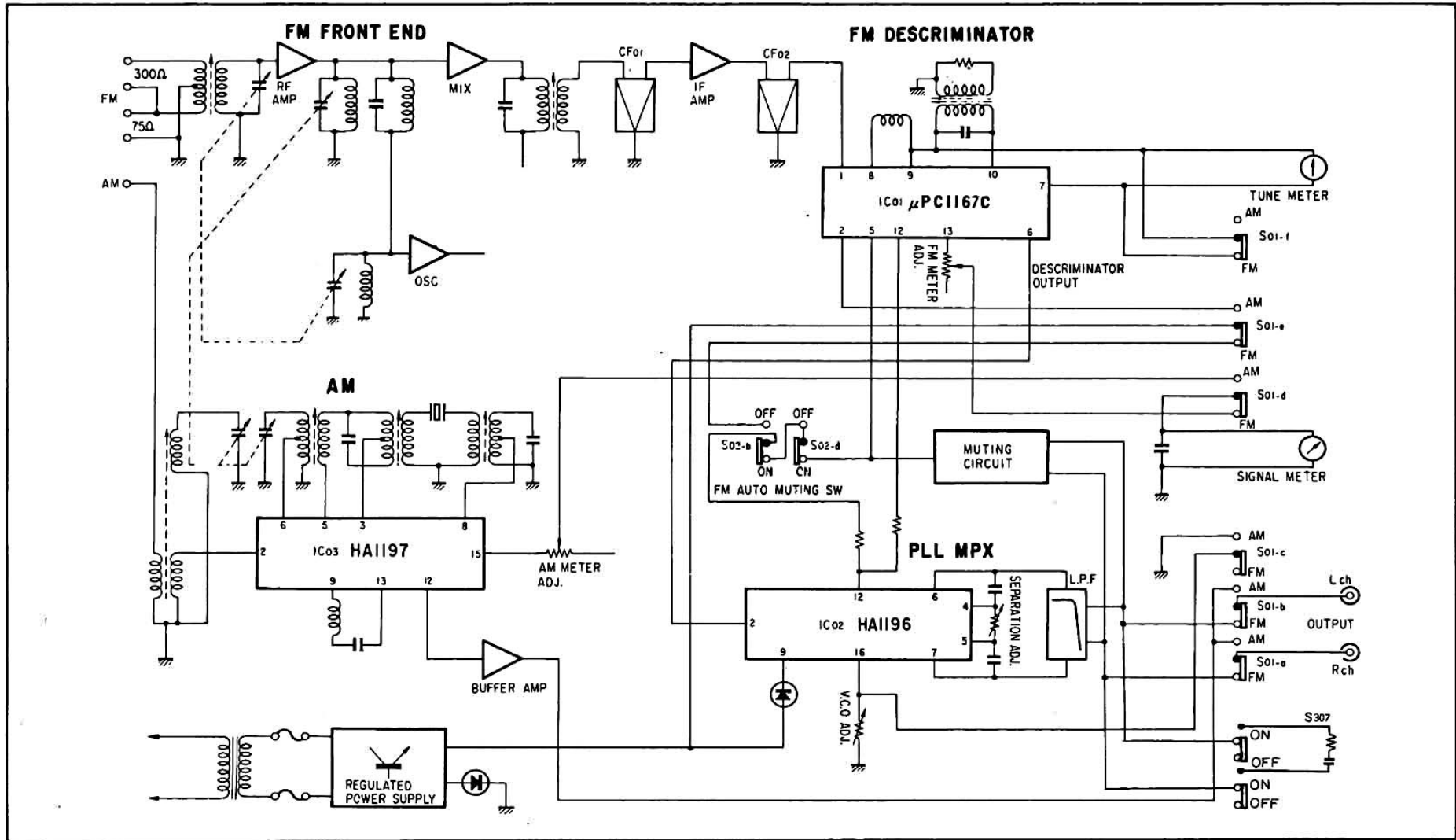


* Design and specifications subject to change without notice for improvements.

Sansui

SANSUI ELECTRIC CO., LTD.

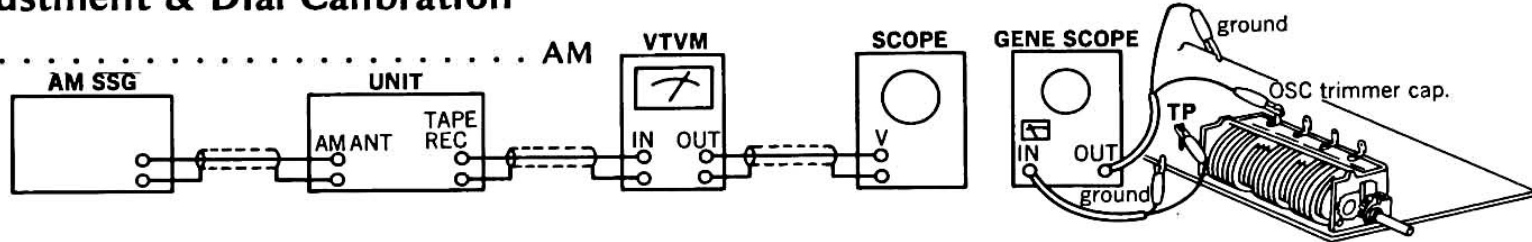
1. BLOCK DIAGRAM



2. ADJUSTMENTS

2-1. AM IF Adjustment & Dial Calibration

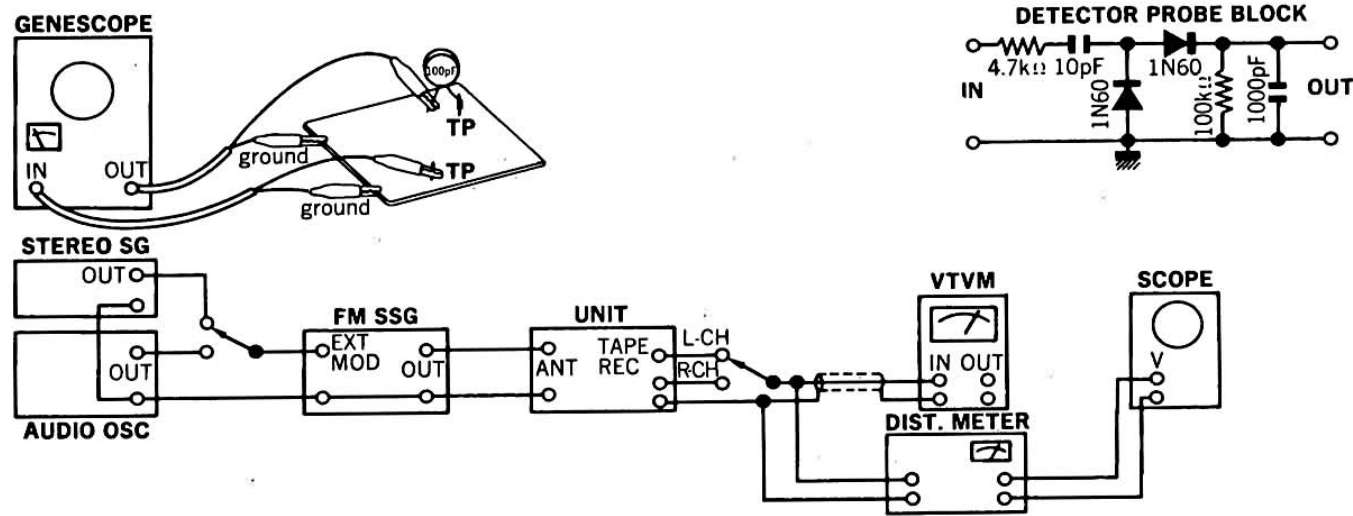
Note: 1. Selector AM



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil	Genescope Output 70 dB	TC05 F-2953	TP07, R62 F-2953 lead wire of R62 F-2953	T05 F-2953	Max. IF waveform	
2.	600 kHz Dial Calibration	600 kHz ANT Input 60 dB 400 Hz (MOD 30%) AM SSG	AM ANT terminal	OUT L or R-CH VTVM & Scope	T04 F-2953	Max. Indication on Signal Meter & V.T.V.M.	
	1400 kHz Dial Calibration	1400 kHz ANT Input 60 dB 400 Hz (MOD 30%) AM SSG	Same as above	Same as above	TC05 F-2953		
3.	600 kHz RF Adj.	600 kHz ANT Input 50 dB 400 Hz (MOD 30%) AM SSG	Same as above	Same as above	Bar Antenna L701	Same as above	
	1400 Hz RF Adj.	1400 kHz ANT Input 50 dB 400 Hz (MOD 30%) AM SSG	Same as above	Same as above	TC04 F-2953	Same as above	
4.	Signal Meter volume	1000 kHz ANT Input 80 dB 400 Hz (MOD 30%) AM SSG	Same as above	Signal Meter	VR04 F-2953	4.3 on meter	

2-2. FM Adjustment

- Note: 1. Selector FM MONO
 2. Connection . . . Connect the output of genescope to TP through 100 pF ceramic capacitor.



1) FM IF, RF Adjustment and Dial Calibration

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil	Output 90 dB Genescope	TP01 F-2953	Lead wire of R19 (Use Detector Probe)	T01 F-2953	Max. IF waveform	
2.	Discriminator Coil in case of using Genescope	Same as above	Same as above	TP02 F-2953	T02, T03 F-2953	Steep linearity of S curve Make symmetrical S curve	
	Discriminator Coil in case of using Dist Meter	90 MHz ANT Input 65 dBf (59.8 dB) 1000 Hz (100% MOD) FM SSG	ANT terminal 300Ω	OUT L or R-CH Dist Meter	T01, T02, T03 F-2953	Minimum THD	
3.	Tune Meter	98 MHz No ANT Input	Same as above	Tune Meter	T02 F-2953	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	OUT L or R-CH VTVM & Scope	L03 F-2953	Max. Indication on signal meter & VTVM & Scope Center Indication on Tune 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-2953		
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-2953	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-2953	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	VR01 F-2953	4.3 on Meter	

2) FM STEREO Adjustment

Note: 1. Selector FM AUTO

STEP	UBJECT	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	VR03 F-2953	Light indicator	Adjust the VR03 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 MOD)	Same as above	TP03 F-2953 Use Freq. counter	VR03 F-2953	76 kHz ± 150 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	OUT L (or R)-CH VTVM & Scope	VR02 F-2953	OUT -34 dB	Confirm separation L-CH → R-CH
3.	Muting level & indicator level	98 MHz ANT Input 18 dBf (12.8 dB) FM SSG Pilot 19 kHz (9% MOD) SUB 1 kHz + Pilot (100% MOD) STEREO SG	Same as above	Stereo indicator		Muting level 15 dBf (9.8 dB) Indicator lighting level 18 dBf (12.8 dB)	FM MUTING Switch ON

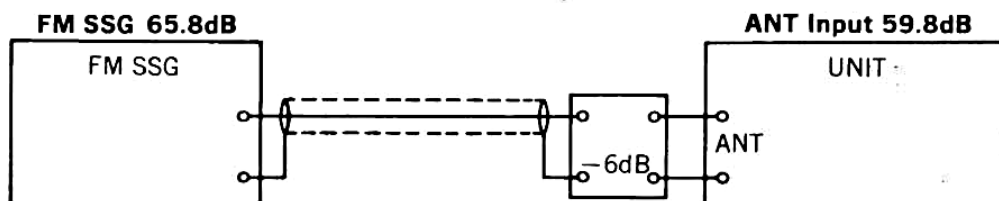
• NEW MEASUREMENT FOR FM.

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 former 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.



• Abbreviations

Equipment

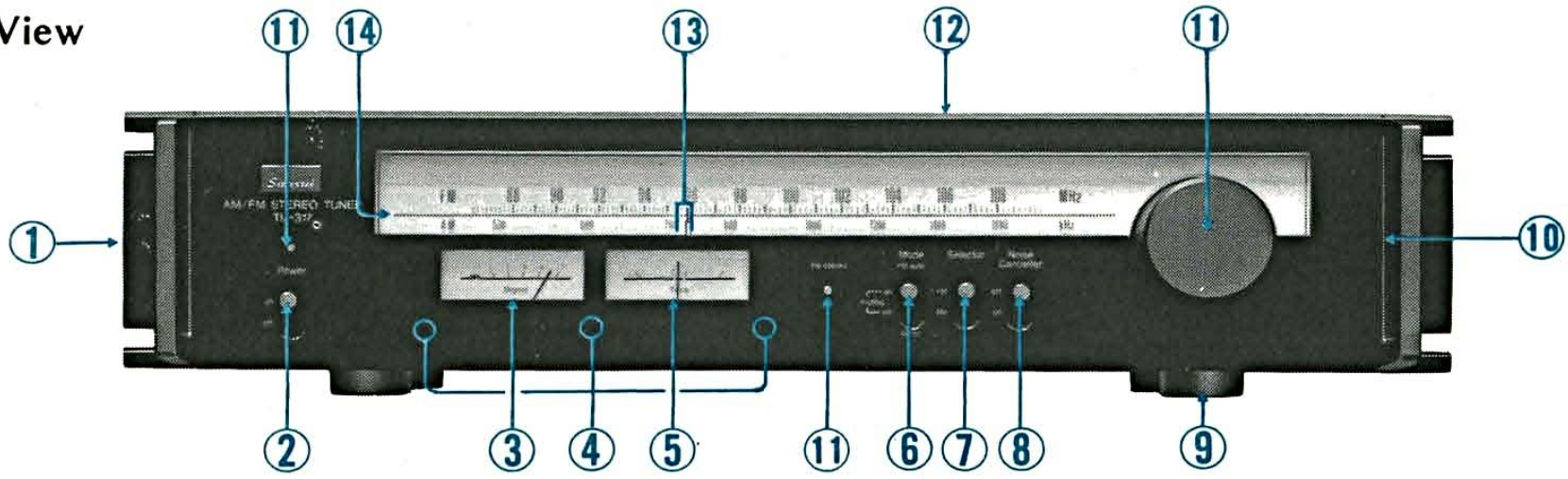
AM FM Generator Oscilloscope	Genescope
AM Standard Signal Generator	AM SSG
FM Standard Signal Generator	FM SSG
FM Stereo Generator	Stereo SG
Oscilloscope	Scope
Audio Oscillator	Audio Osc.

Others

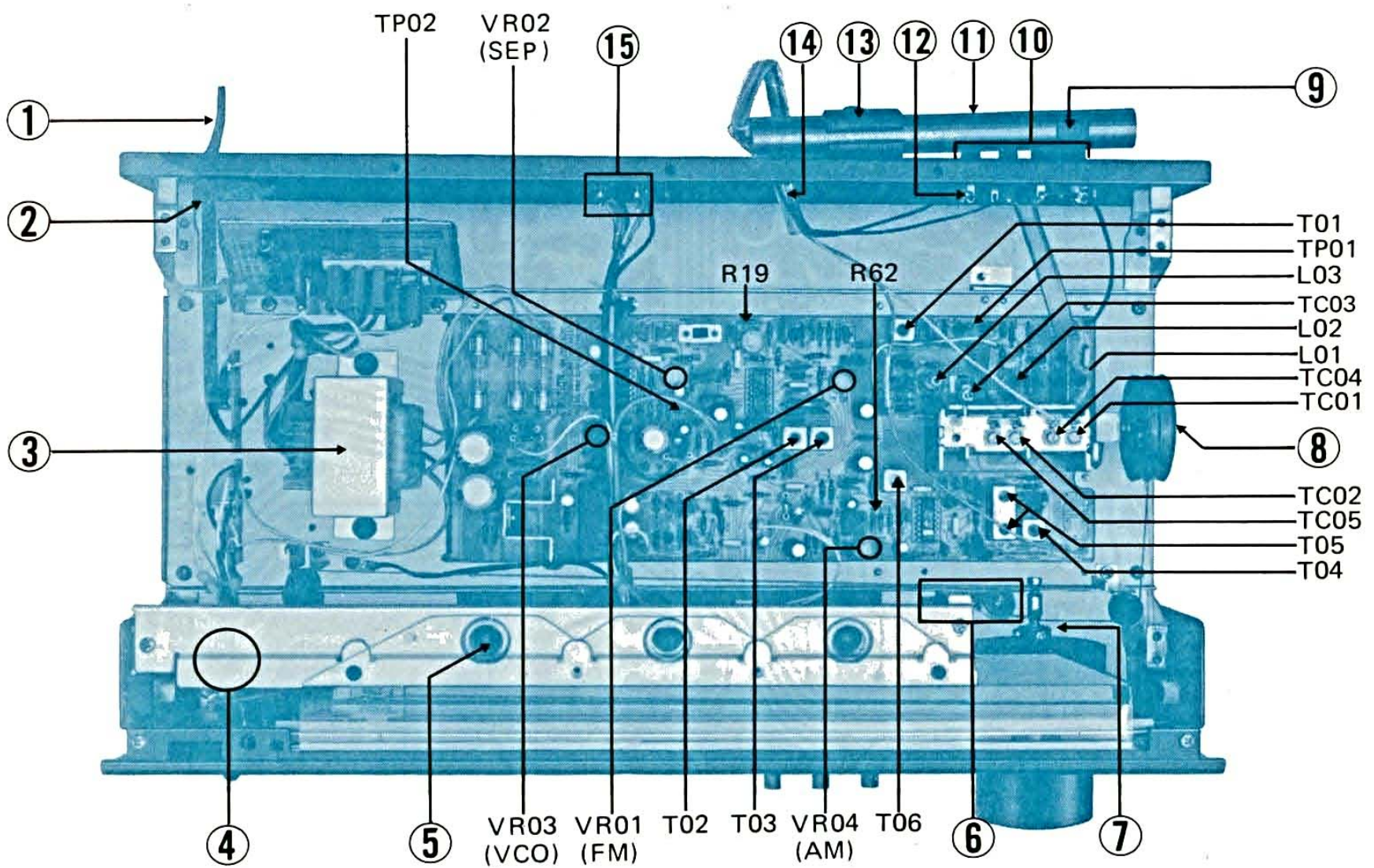
Antenna	ANT.
Modulation	MOD.
Total Harmonic Distortion	T.H.D.

3. OTHER PARTS

3-1. Front View



3-2. Top View



Parts List <Front View>

No.	Parts No.	Stock No.	Description
1		5396350	Rack Mounting Adaptor
2	S 701	{ 1171640 5326611	Lever Switch, power Knob, power switch
3	M 707	4301290	Signal Meter
4	PL 01 ~ 03	0400640	Lamp, meter illumination
5	M 702	4301300	Tune Meter
6	S 02	{ 1171130 5326611	Lever Switch, mode Knob, mode
7	S 01	{ 1171170 5326611	Lever Switch, selector Knob, selector
8	S 307	{ 1171130 5326611	Lever Switch, noise canceller Knob, noise canceller
9		5507070	Leg
10		7007981	Front Panel Ass'y
11		{ 0319120 5296167 5336680 5318960	Power Indicator, stereo indicator Window, dial scale SANSUI Mark Tuning Knob
12		5006300	Bonnet
13		5416474	Dial Pointer
14		5408490	Dial Scale

Parts List <Top View>

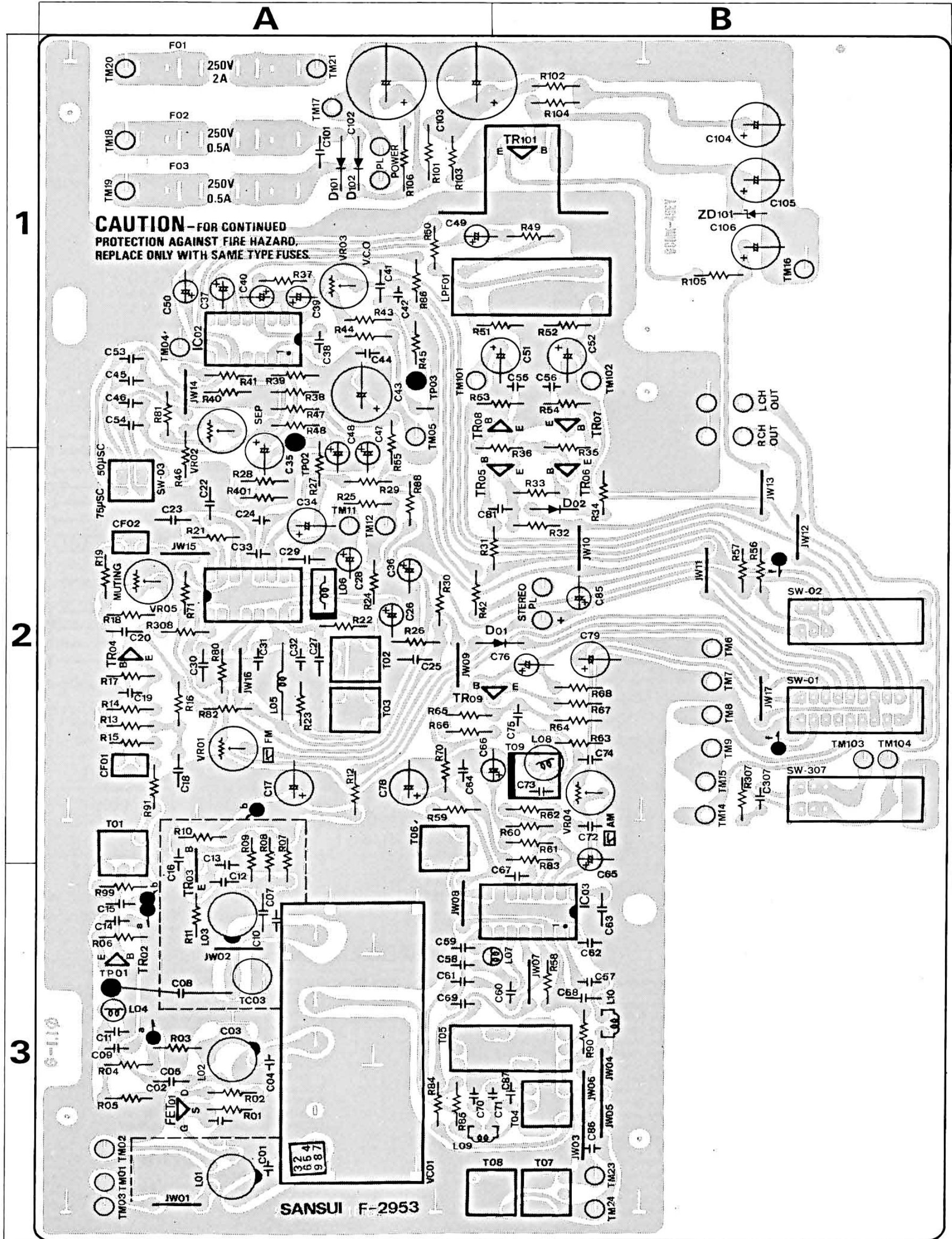
No.	Parts No.	Stock No.	Description
1		3800470, 1	Power Cord
2		3910510	Strain Relief, power cord
3	PT 01	4002850	Power Transformer
4	C 701	{ 0659801 5616220	0.07μF 150V C.C. Capacitor Cover
5	PL 01, 02	0400650	Lamp 8V 300mA
6		7136141	Tension Unit
7		7036551	Tuning Unit
8		6146670	Pulley
9		5286480	Antenna Holder (B)
10		2210310	Antenna Terminal Board
11	L 701	4200860	Bar Antenna
12	R 702	6103122	1.2kΩ 1/2W C.R.
13		5286450	Antenna Holder (A)
14		3910600	Strain Relief
15		2200300	Output Terminal Board

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-2953, FM, AM Circuit Board (Stock No. 7521971)

Conductor Side

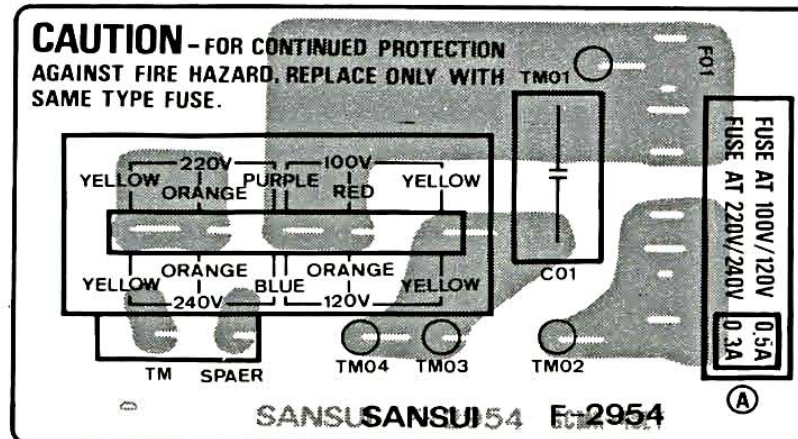


Parts List (F-2953)

Parts No.	Stock No.	Description	Position
•Transistors			
TR02, 03	0305801, 2	2SC1047 B, C	3A
TR04	0306341, 2	2SC1674 L, K	2A
TR05	0306070, 1	2SC1313 F, G	2A
TR06	0300470, 1	2SA726 (W) F, G	2B
TR07, 08	0305951, 2	2SC945 Q, P	1B, 1A
TR09	0306070, 1	2SC1313 F, G	2A
TR101	0308391, 2	2SD313AL D, E	1B
•ICs			
IC 01	0360750	μPC1167C	
IC 02	0360730	HA-1196-03	1A
IC 03	0306390	HA-1197	3B
•FET			
FT 01	0370172	2SK49H	3A
•Diodes			
D 01	0340170	MV-103	2B
D 02	0311160	1S2473D	2B
D 101	0310340	10D1 (1S2226)	1A
D 102	0310340	10D1 (1S2226)	1A
•Zener Diode			
ZD101	0315970	EQA01-13R	1B
C 01	0669347	12pF 50V C.C.	3A
C 03	0659015	2200pF 50V C.C.	3A
C 04	0669350	15pF 50V C.C.	3A
C 05	0669509	9pF 50V C.C.	3A
C 07	0669355	20pF 50V C.C.	3A
C 08	0679012	1.5pF 500V Gimmic C	3A
C 10	0669210	10pF 50V C.C.	3A
C 11	0669504	4pF 50V C.C.	3A
C 12	0669210	10pF 50V C.C.	3A
C 13	0669219	10pF 50V C.C.	3A
C 37	0573228	0.22μF 35WV T.C.	1A
C 39	0573339	3.3μF 35WV T.C.	1A
C 40	0573159	1.5μF 35W T.C.	1A
C 42	0629005	360pF 50V P.C.	1A
C 53, 54	0620561	560pF 50V	1A
C 70	0669415	15pF 50V C.C.	3A
C 71	0620361	360pF 50V P.C.	3B
R 101	0193100	10Ω 1/4W F.R.	1A
R 106	0103122	1.2kΩ 1/2W C.R.	1A
L 01	4200720	Antenna Coil	3A
L 02	4210340	RF Coil	3A
L 03	4220400	O.S.C. Coil	3A
L 04	4900140	1μH Inductor	3A
L 05	4290011	Peaking Coil	2A
L 06	4290300	18μH Inductor	2A
L 07	4900110	100μH Inductor	3B
L 09	4900140	1μH Inductor	3A
L 10	4900100	3.3μH Inductor	3B
T 01	4235930	IF Coil	2A
T 02	4236050	Quadrature Coil	2A
T 03	4236060	Quadrature Coil	2A
T 04	4220590	150μH O.S.C. Coil	3B
T 05	0910370	Ceramic Filter	3B
T 06	4230620	IF Coil	2A
T 09	0910450	Ceramic Filter	2B
CF 01, 02	0910380	Ceramic Filter	2A
LF 01	0910220	Low Pass Filter	
VR01	1035170	Volume 47Ω B FM Meter Adj.	2A
VR02	1035210	Volume 220kΩ B Stereo Separation	2A
VR03	1034250	Volume 4.7kΩ B V.C.O. Free Run Adj.	1A
VR04	1035110	Volume 4.7kΩ B AM Meter Adj.	2B
S 01	1171170	Lever Switch Selector	1A
S 02	1171130	Lever Switch Mode	2B
S 03	1110270	Slide Switch, de-emphasis	2B
S 307	1171130	Lever Switch Noise Canceller	1A
F 01	0432240	AC Fuse 2A 250V	3A
F 02	0432210	AC Fuse 0.5A 250V	
F 03	0432210	AC Fuse 0.5A 250V	3A
VC01	1220210	AM, FM Variable Capacitor	
TC 03	1230090	Trimmer Capacitor	

4-2. F-2954 Voltage Selector

Conductor Side



Parts List

Parts No.	Stock No.	Description
C 01	0635476	0.0047μF 125WV M.C.
F 01	0432230	1.5A 250V

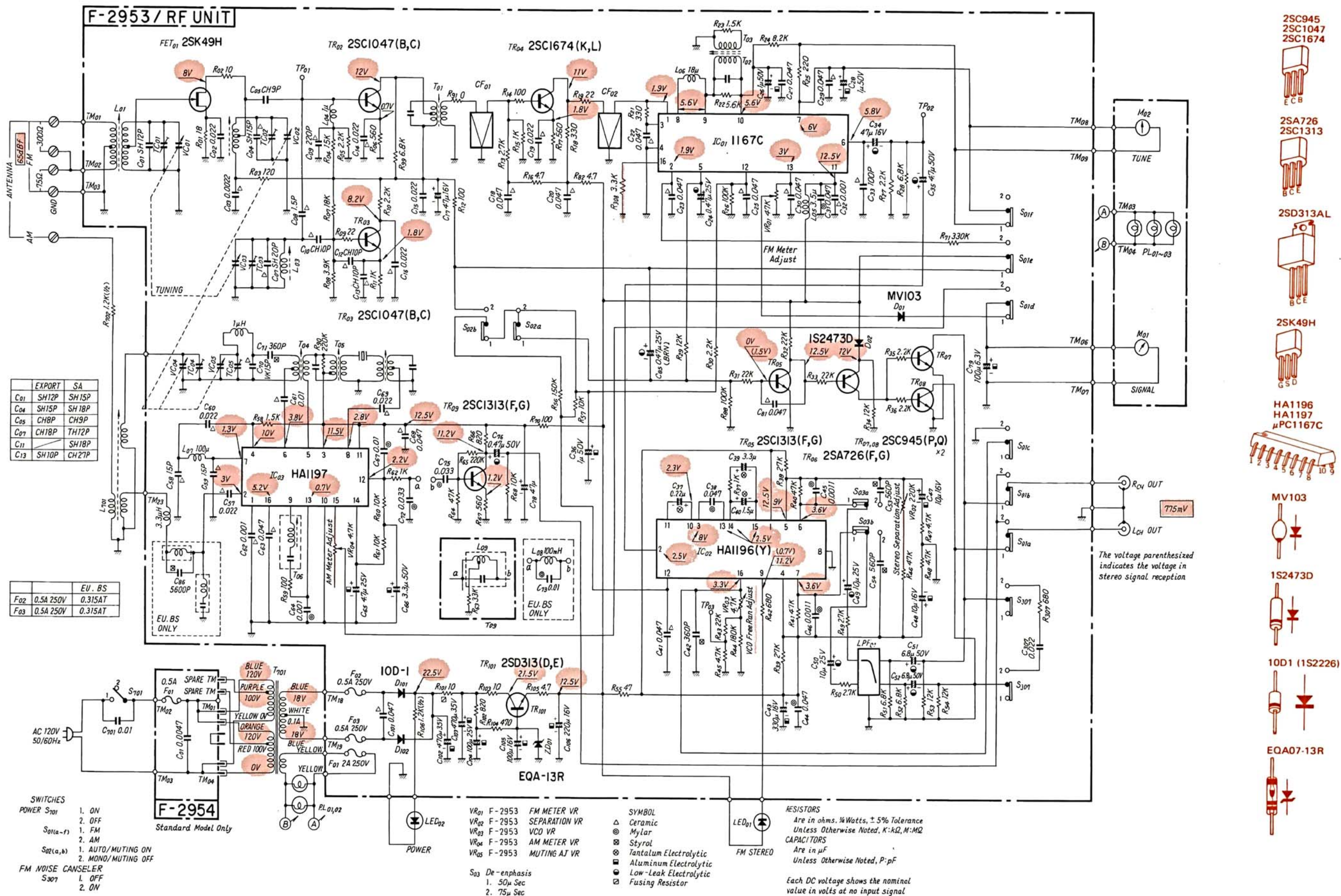
- The circuit board F-2954 is not supplied as the assembled, the individual parts on the circuit board, however, are provided for orders.

• Abbreviations

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

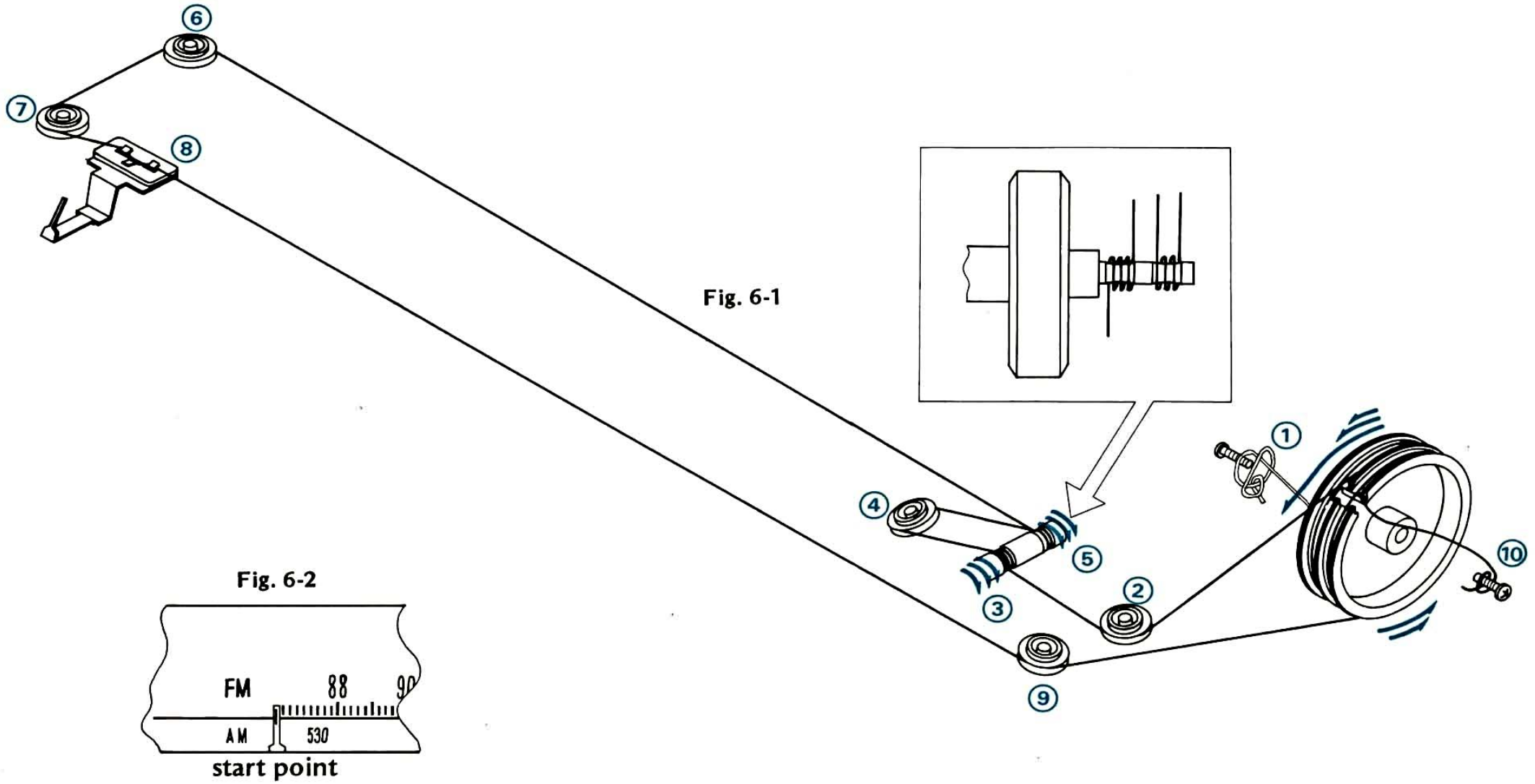
- Design and specifications subject to change without notice for improvement.
- La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
- Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

5. SCHEMATIC DIAGRAM



6. 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 170 cm (66.9 inch).



6-1. Threading of Dial Cord

Read the dial cord in numerical order from 1 to 10 as Fig. 6-1. Open the variable capacitor completely.

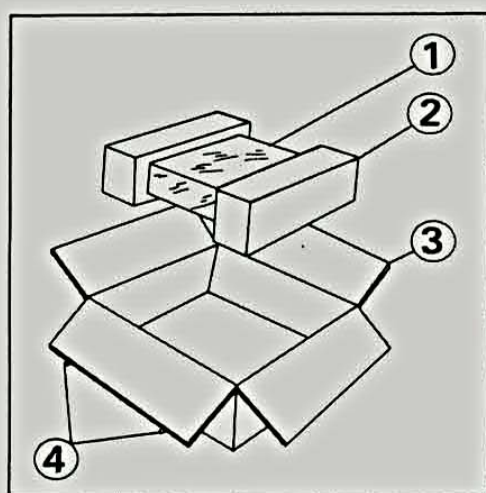
Stock No.	Description
6036050	Dial Cord (0.5 mmφ)
6146670	Dial Pulley

6-2. Attachment of Dial Pointer

1. Close the variable capacitor completely.
 2. Set the dial pointer to the start-point as Fig. 6-2.
- * Confirm that the dial pointer runs smoothly on the dial scale by turning the tuning shaft.

7. PACKING LIST

Parts No.	Stock No.	Description
1	9116760	Vinyl Cover
2	9028100	Styrofoam Packing
3	9001241	Carton Case
4	5996080	Curl Stopper



8. ACCESSORY PARTS LIST

Stock No.	Description
9204110	Operating Instructions
9237990	Schematic Diagram
3820100	FM Antenna
3810280	Pinplug Cord
5192082	Hexagon Wrench (1.5 mm)
5396350	Rack Mounting Adaptor (each)

MEMO



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