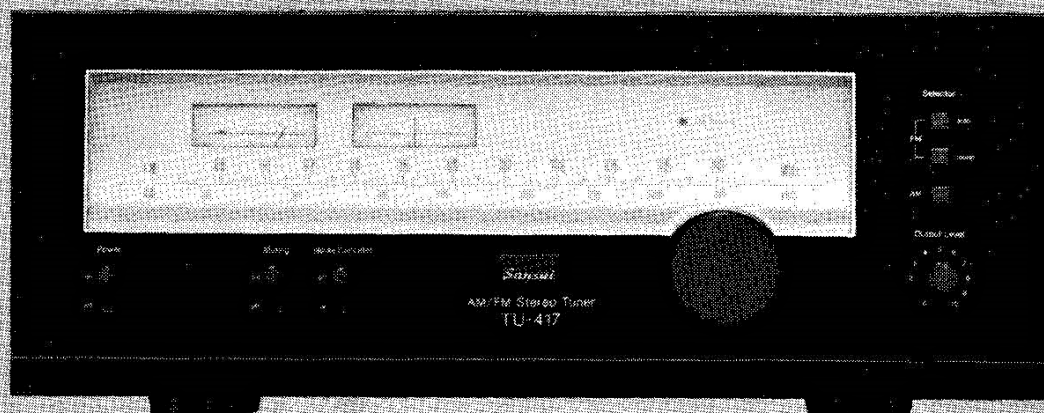


SERVICE MANUAL

AM/FM STEREO TUNER

SANSUI TU-417

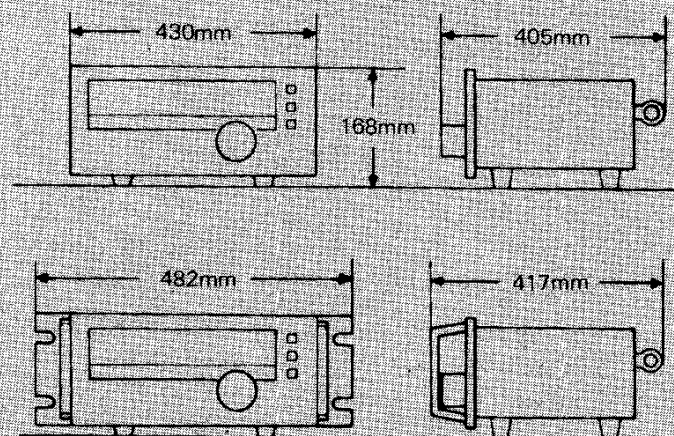


SPECIFICATIONS

FM Section	
Tuning range	88 to 108 MHz
Usable Sensitivity	
Mono IHF	10.1 dBf (1.75 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	
	20 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 to 775 mV
Power requirements	100, 120, 220, 240 V 50/60 Hz
	For U.S.A. and Canada
	120 V (60 Hz)
Power consumption	17 W
Weight	
	8.3 kg (18.3 lbs) net
	9.8 kg (21.6 lbs) packed

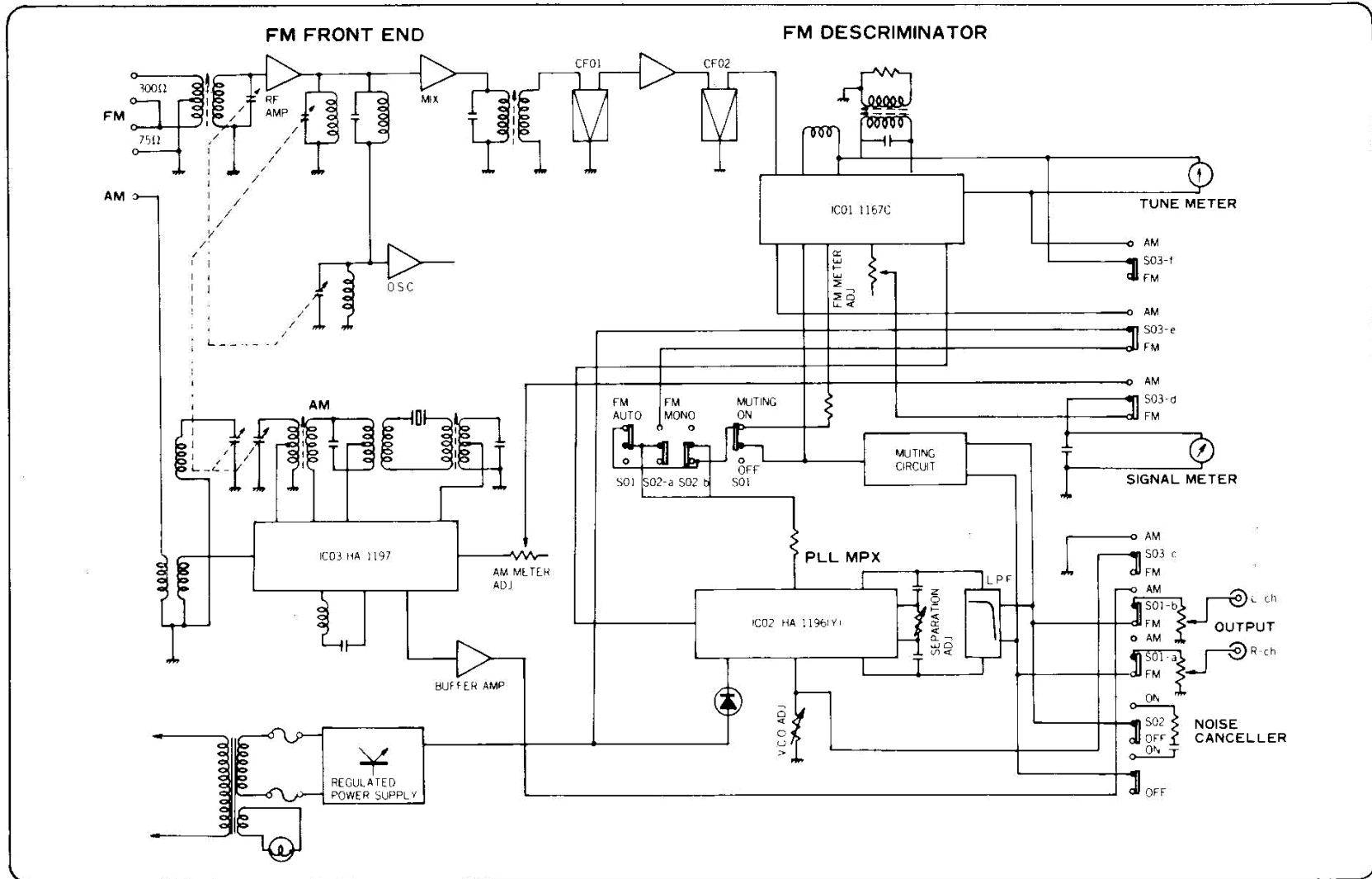


* Design and specifications subject to changes without notice for improvements.

Sansui

SANSUI ELECTRIC CO., LTD.

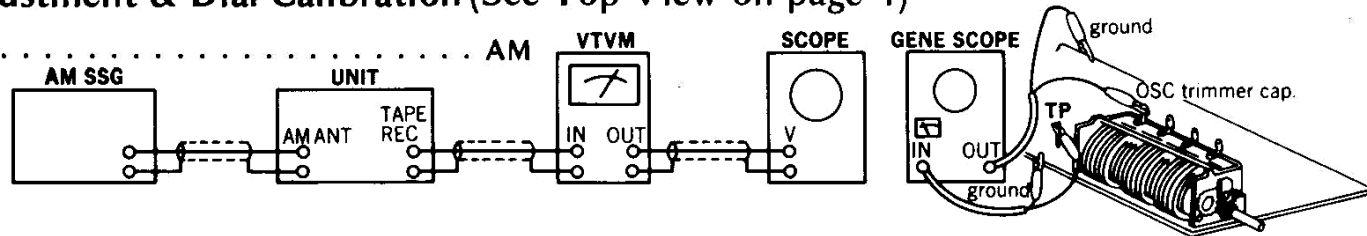
1. BLOCK DIAGRAM



2. ADJUSTMENTS

2-1. AM IF Adjustment & Dial Calibration (See Top View on page 4)

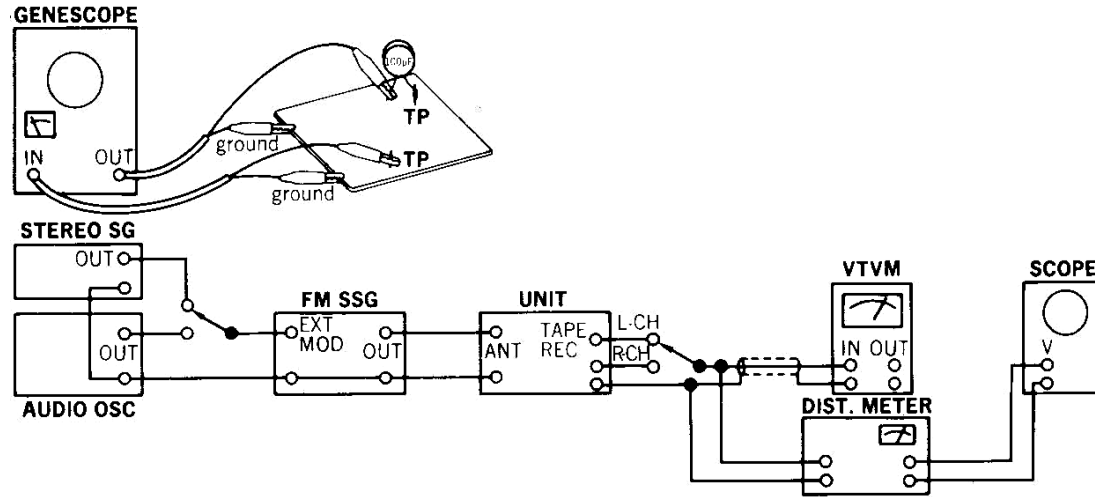
Note: 1. Selector



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF Coil	Genescope Output 70 dB	TC05 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 (See Top View on page 4)

- Note: 1. Selector FM MONO
 2. Muting OFF
 3. Connection Connect the output of genescope to TP01 through 100pF ceramic capacitor.



1) FM IF, RF Adjustment and Dial Calibration

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	REMARKS
		FROM	TO				
1.	IF & Discriminator Coil in case of using Genescope	Output 90 dB Genescope	TP01 F-2953	TP02 F-2953	T01, T02, T03 F-2953	Make the linear part of S curve wider Steep linearity of S curve Make symmetrical S curve	
	IF & 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	
2.	Tune Meter	No ANT Input	Same as above	Tune Meter	T02 F-2953	Center on Meter	
3.	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		
4.	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	
5.	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 (See Top View on page 4)

Note: 1. Selector FM AUTO

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	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	
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

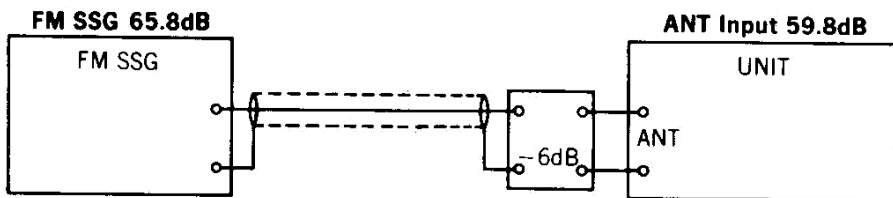
• NEW MEASUREMENT FOR FM.

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

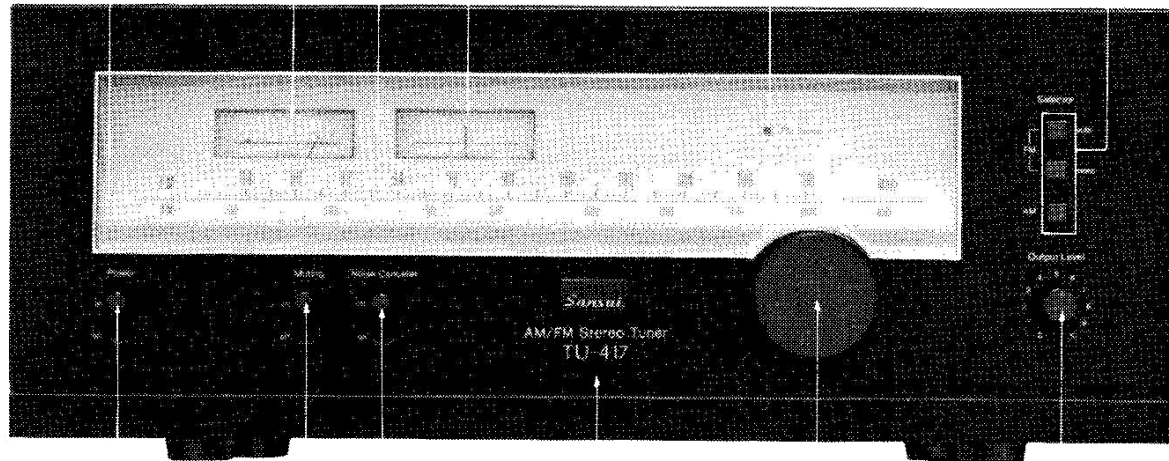
AM FM Generator Oscilloscope	Genescope
AM Standard Signal Generator	AM SSG
FM Standard Signal Generator	FM SSG
FM Stereo Generator	Stereo SG
Oscilloscope	Scope
Audio Oscillator	Audio Osc.
Distortion Meter.	Dist Meter

Others

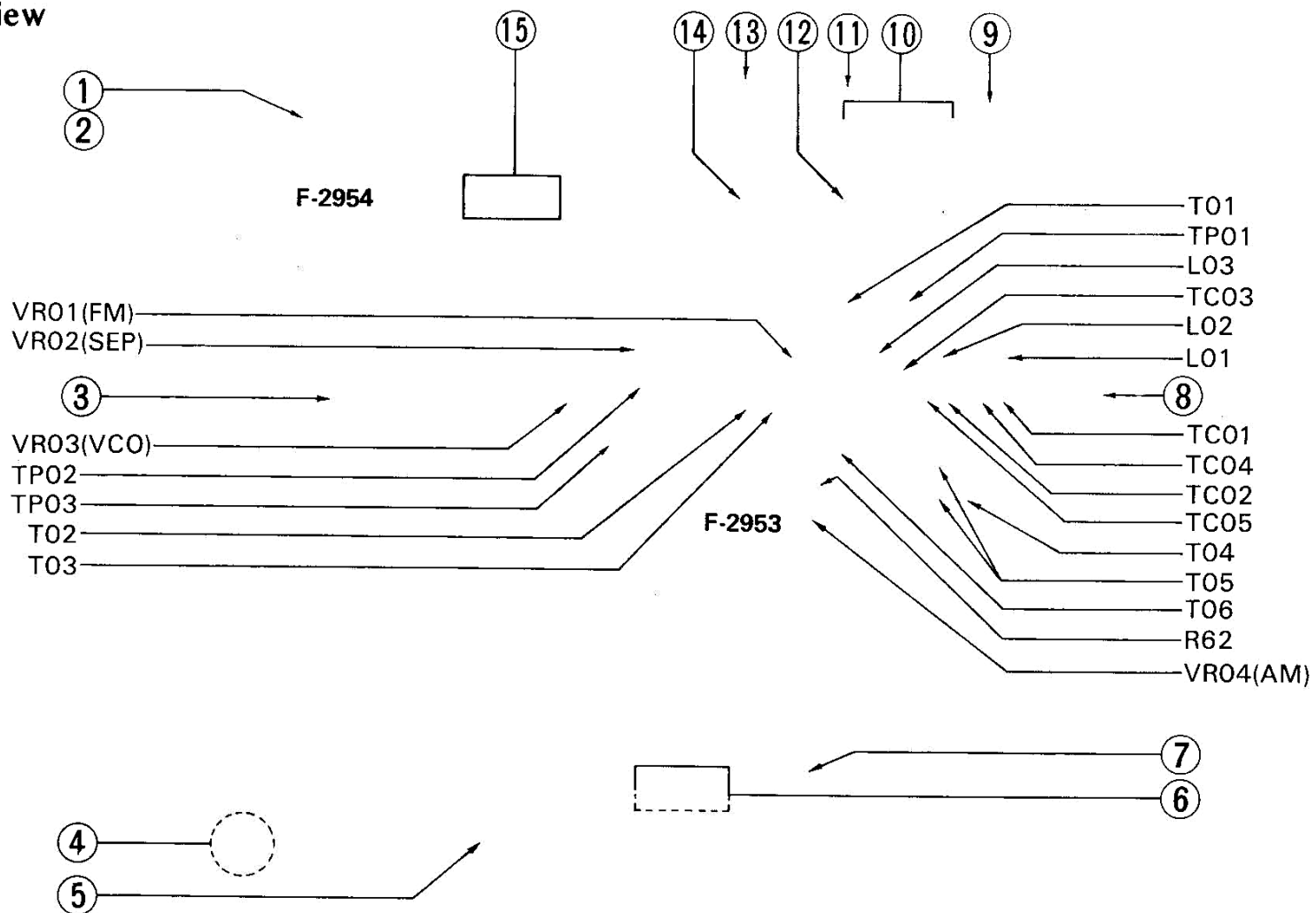
Antenna	ANT.
Modulation	MOD.
Total Harmonic Distortion	T.H.D.

3. OTHER PARTS

3-1. Front View



3-2. Top View



Parts List <Front View>

No.	Parts No.	Stock No.	Description
1		7008160	Front Panel Ass'y
		5326620	Push Knob
		6906480	Spring
2		5286721	Knob guide
		5456640	Window glass
		5336600	SANSUI Mark
3		5318960	Tuning Knob
4	VR01	5318940	Knob, Output Level
		1015480	Volume 10kΩ (B) X 2
			Output level
5		0319120	Stereo Indicator
6		5006880	Bonnet
7	M 702	4301300	Tune Meter
8		5416462	Dial Pointer
9	M 701	4200860	Signal Meter
10		5408640	Dial Scale
11	S 701	1171640	Power Switch
		5326612	Knob, Power Switch
12		5507070	Leg
13		5326612	Knob, Muting
14		5326612	Knob, Noise Canceller

Parts List <Top View>

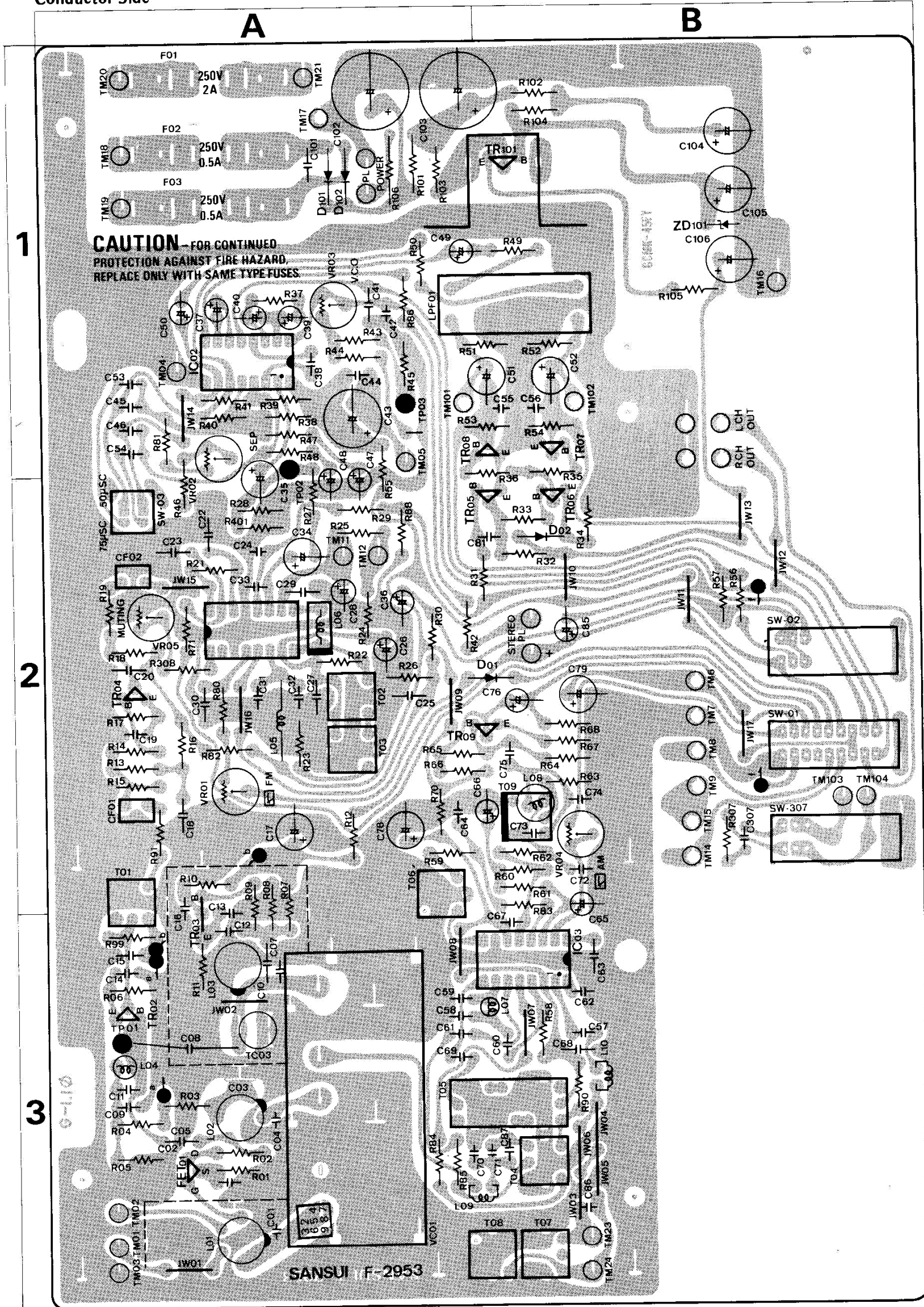
No.	Parts No.	Stock No.	Description
1		3800470, 1	Power Cord
2		3910510	Strain Relief, power cord
3	PT 701	4002850	Power Transformer
4	C 701	0659801	0.01μF 150V C.C.
		5616220	Capacitor Cover
		7726130	Lamp Unit Ass'y
5		5037530	Blue Filter
6		7136091	Tension Unit
7		7036670	Tuning Unit
8		6146721	Pulley
9		5286480	Antenna Holder
10		2210310	Antenna Terminal Board
11	L 701	4200860	Bar Antenna 250μH
12	R 702	0103122	1.2kΩ 1/2W C.R.
13		5286450	Antenna Holder
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, RF, IF Circuit Board (Stock No. 7522061)

Conductor Side



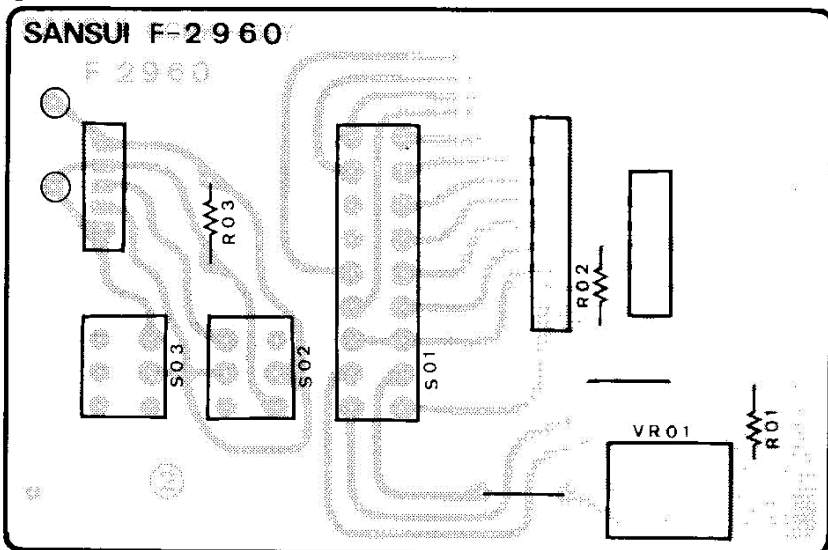
Parts List <F-2953>

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
•Transistors											
TR02,03	0305801,2	2SC1047 B,C	3A	C 05	0669509	9pF 50V C.C.	3A	T 02	4236050	Quadrature Coil	2A
TR04	0306341,2	2SC1674 L,K	2A	C 07	0669355	20pF 50V C.C.	3A	T 03	4236060	Quadrature Coil	2A
TR05	0306070,1	2SC1313 F,G	2A	C 08	0679012	1.5pF 500V Gimmic C	3A	T 04	4220590	150μH O.S.C. Coil	3B
TR06	0300470,1	2SA726 (W) F,G	2B	C 10	0669210	10pF 50V C.C.	3A	T 05	0910370	Ceramic Filter	3B
TR07,08	0305951,2	2SC945 Q,P	1B,1A	C 11	0669504	4pF 50V C.C.	3A	T 06	4230620	IF Coil	2A
TR09	0306070,1	2SC1313 F,G	2A	C 12	0669210	10pF 50V C.C.	3A	T 09	0910450	Ceramic Filter	2B
TR101	0308391,2	2SD313AL D,E	1B	C 13	0669210	10pF 50V C.C.	3A	CF01,02	0910480	Ceramic Filter	2A
•ICs											
IC 01	0360750	μPC1167C		C 37	0573228	0.22μF 35WV T.C.	1A	LF01	0910220	Low Pass Filter	
IC 02	0360730	HA-1196-03	1A	C 39	0573339	3.3μF 35WV T.C.	1A	VR01	1035170	Volume 47Ω B	2A
IC 03	0306390	HA-1197	3B	C 40	0573159	1.5μF 35W T.C.	1A	VR02	1035210	Volume 220kΩ B	2A
•FET											
FT01	0370172	2SK49H	3A	C 42	0629007	360pF 50V P.C.	1A	VR03	1034250	Volume 4.7kΩ B	1A
•Diodes											
D 01	0340170	MV103	2B	C 53,54	0620561	560pF 50V	1A	VR04	1035110	V.C.O. Free Run Adj.	2B
D 02	0311160	1S2473D	2B	C 70	0669415	15pF 50V C.C.	3A	S 03	1110270	Slide Switch, de-emphasis	2B
D 101	0310340	10D1	1A	C 71	0620361	360pF 50V P.C.	3B	F 02	0432210	AC Fuse 0.5A 250V	
D 102	0310340	10D1	1A	C 86	0620562	5600pF 50V P.C.	3B	F 03	0432210	AC Fuse 0.5A 250V	3A
•Zener Diode											
ZD101	0315970	EQA01-13R	1B	R 101	0193100	10Ω 1/4W F.R.	1A	VC01	1220210	AM, FM Variable Capacitor	
C 01	0669347	12pF 50V C.C.	3A	L 01	4200720	Antenna Coil	3A	TC03	1230090	Trimmer Capacitor	
C 03	0659015	2200pF 50V C.C.	3A	L 02	4210340	RF Coil	3A				
C 04	0669350	15pF 50V C.C.	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				

- The circuit board F-2954, F-2960 and F-2961 are not supplied as the assembled, the individual parts on the circuit board, however, are provided for orders.

4-2. F-2960 FM, AM Selector Circuit Board

Conductor Side

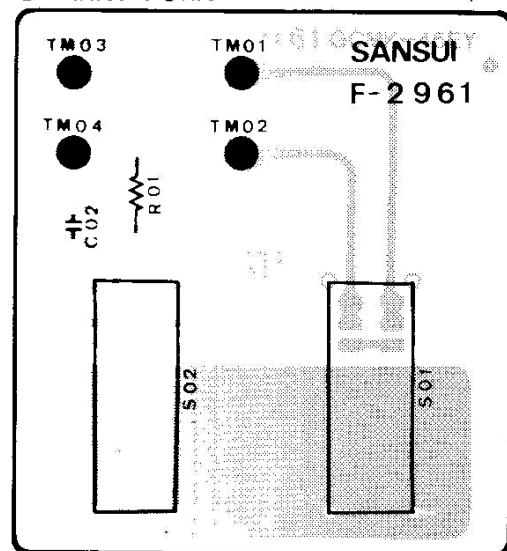


Parts List

Parts No.	Stock No.	Description
VR01	1015480	Volume, 10 kΩ (B) X 2, output level
S01	1131720	Push Switch, selector

4-3. F-2961 MUTING Switch Circuit Board

Conductor Side

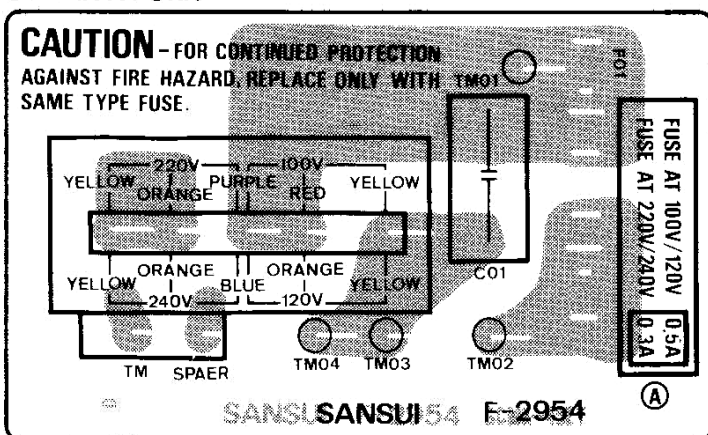


Parts List

Parts No.	Stock No.	Description
S01, S2	1171130	Lever Switch, muting, noise Canceller

4-4. F-2954 Voltage Selector Circuit Board

Conductor Side



Parts List

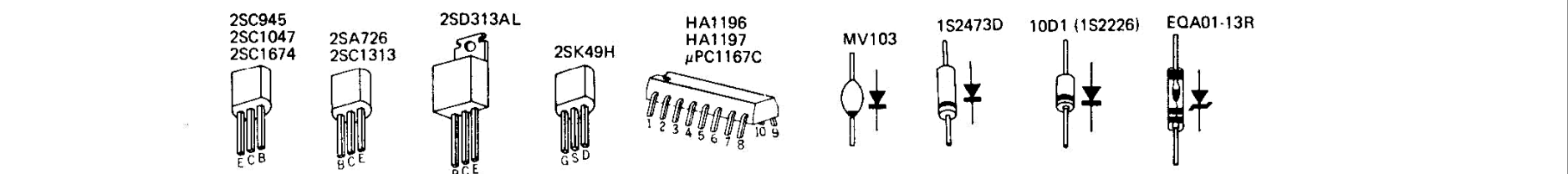
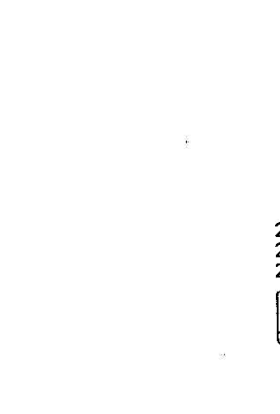
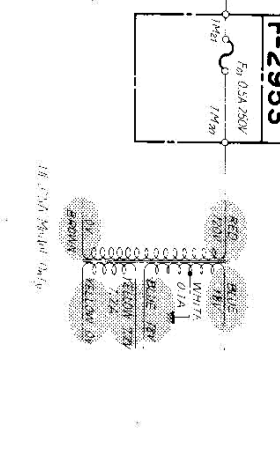
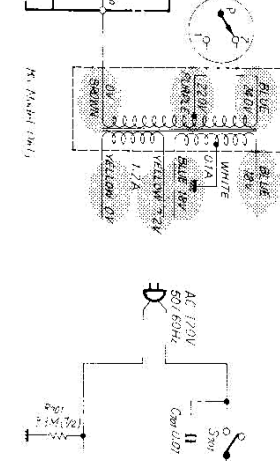
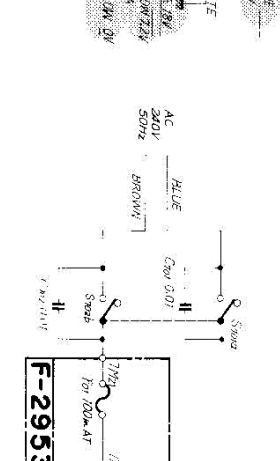
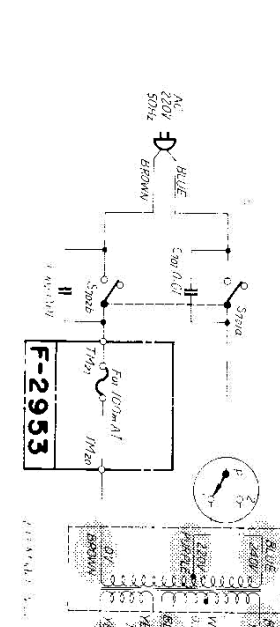
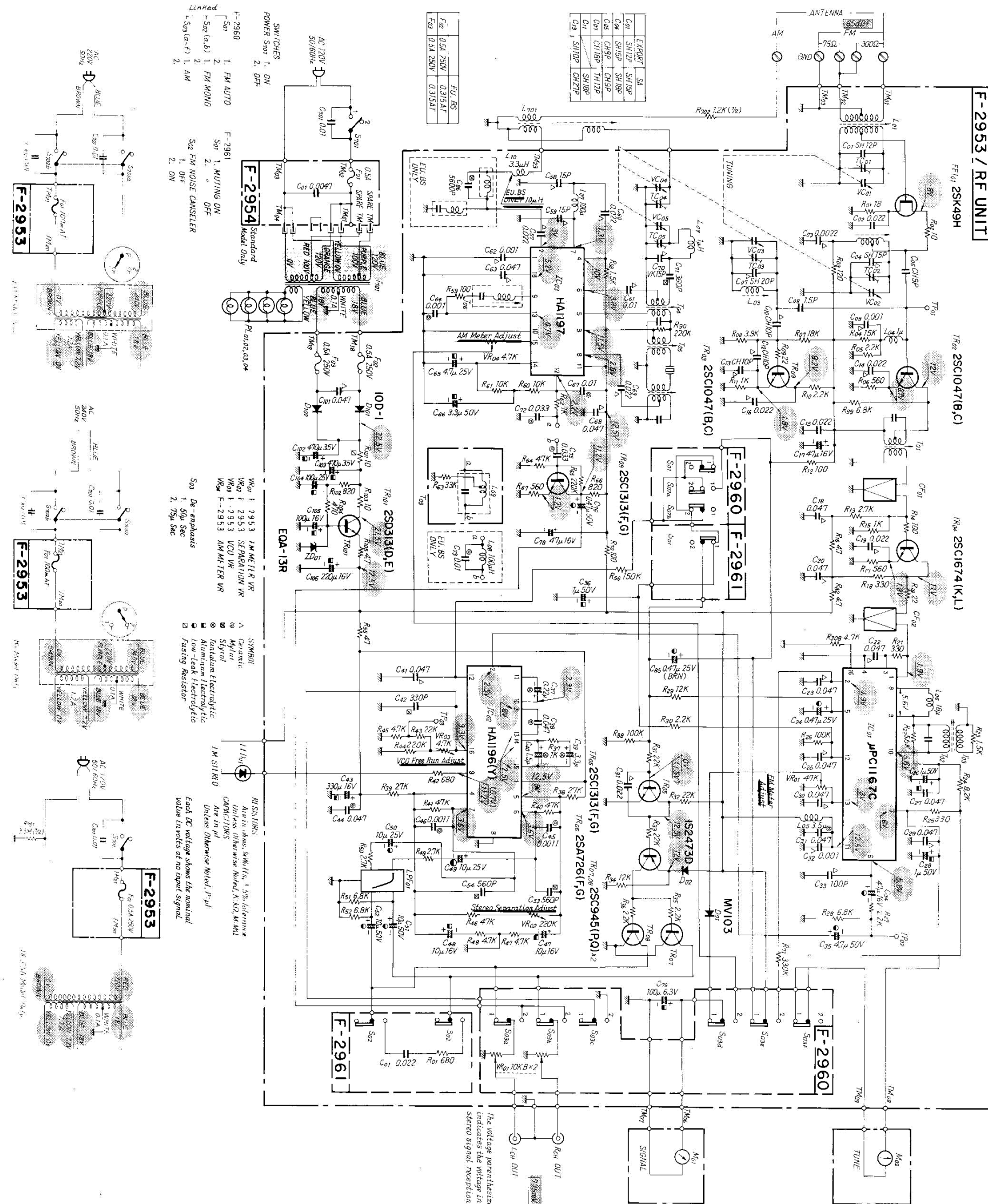
Parts No.	Stock No.	Description
C 01	0659802	0.0047μF C.C.
F 01	0431200	AC Fuse 0.3A 250V
	0431210	AC Fuse 0.5A 250V for 120V area

• Abbreviations

C.R.	Carbon Resistor
S.R.	Solid Resistor
Co.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.

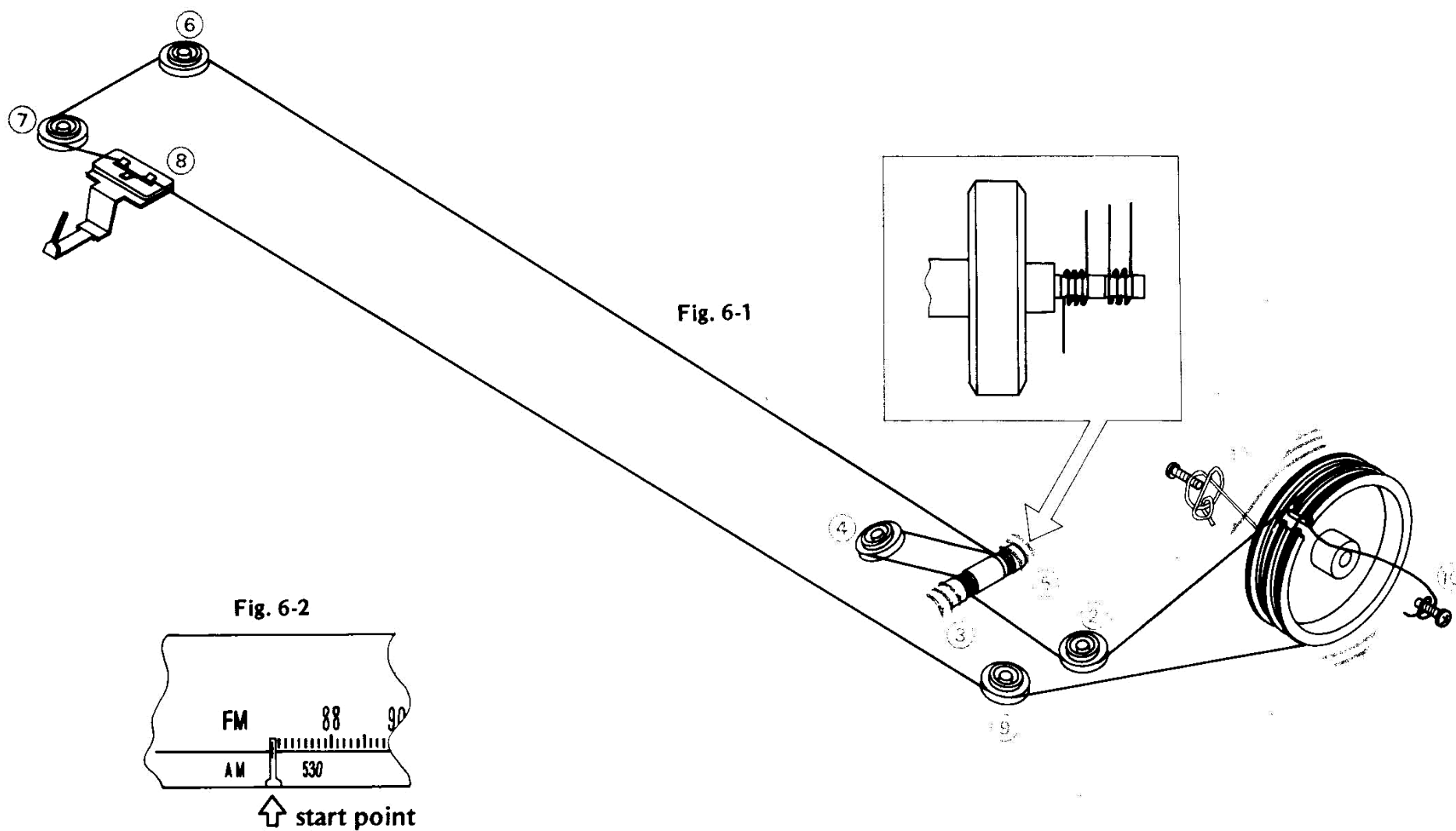
5. SCHEMATIC DIAGRAM



1
 2
 3
 4
 5
 6

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

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

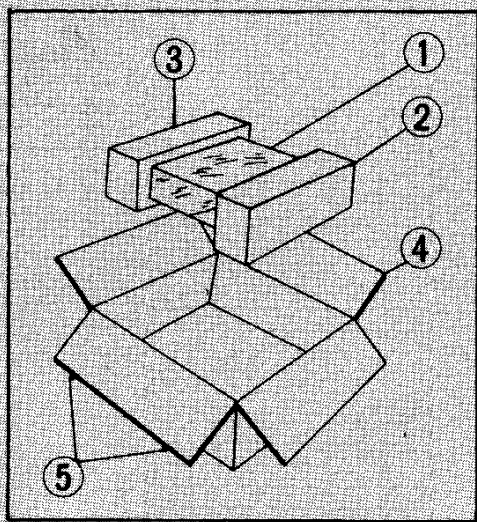
Stock No.	Description
6036050	Dial Cord (0.5 mmφ)
6146670	Dial Pulley

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	9116790	Vinyl Cover
2	9028030	Styrofoam Packing (R)
3	9028021	Styrofoam Packing (L)
4	9001700	Carton Case
5	5996080	Curli Stopper



8. ACCESSORY PARTS LIST

Stock No.	Description
9204500	Operating Instructions
3810280	PJP Cord
3820120	FM Antenna
9238100	Schematic Diagram
5396720	Rack Mounting Adaptor (each)

MEMO



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