

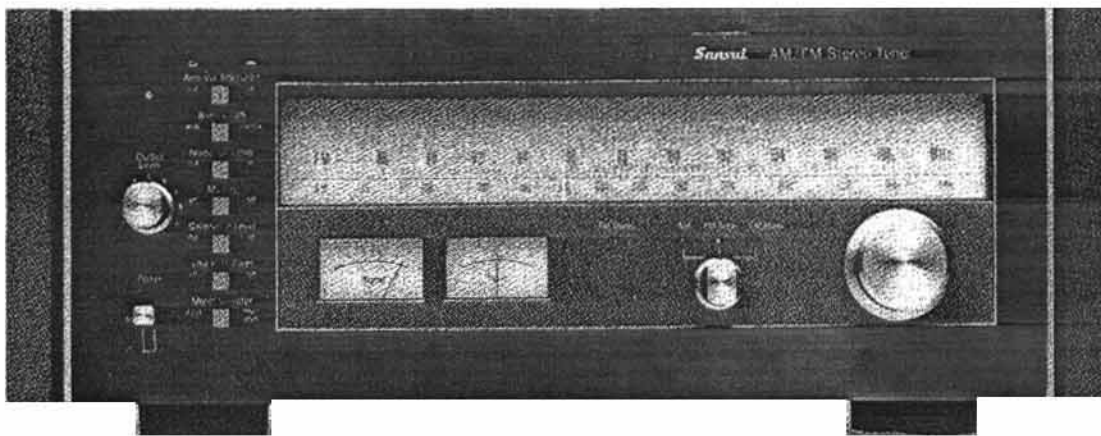


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SERVICE MANUAL

AM/FM STEREO TUNER

SANSUI TU-9900



SANSUI ELECTRIC CO., LTD.

This service manual is designed for service engineers to repair, adjust, maintain and order the replacement parts of the TU-9900 correctly. When ordering the parts, use the stock number and parts name specifically referring to the Parts Locations & Parts Lists. For general usage and maintenance of the unit, please refer to the Operating Instructions attached with the unit.

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1. SPECIFICATIONS

FM SECTION

TUNING RANGE 88 to 108 MHz

SENSITIVITY (IHF) 1.5 μ V

(DIN)..... 0.9 μ V

QUIETING SLOPE

STEREO: WIDE 39dB (10 μ V), 53dB (50 μ V)

NARROW 40dB (10 μ V), 54dB (50 μ V)

MONO: WIDE 61dB (10 μ V), 73dB (50 μ V)

NARROW 61dB (10 μ V), 73dB (50 μ V)

TOTAL HARMONIC DISTORTION

STEREO: WIDE less than 0.08% (1 kHz)

less than 0.1% (50 Hz)

less than 0.15% (10 kHz)

NARROW less than 0.8% (1 kHz)

less than 0.8% (50 Hz)

less than 1.2% (10 kHz)

MONO: WIDE less than 0.06% (1 kHz)

NARROW less than 0.5% (1 kHz)

SIGNAL TO NOISE RATIO

..... better than 76dB (stereo)

better than 80dB (mono)

SELECTIVITY

WIDE better than 55dB (400 kHz)

better than 5dB (200 kHz)

NARROW better than 90dB (400 kHz)

better than 20dB (200 kHz)

CAPTURE RATIO

WIDE less than 1.0dB

NARROW less than 3.0dB

AM SUPPRESSION..... better than 58dB

IMAGE REJECTION better than 100dB (98 MHz)

IF REJECTION better than 110dB (98 MHz)

SPURIOUS REJECTION better than 110dB (98 MHz)

SPURIOUS RADIATION less than 34dB

STEREO SEPARATION

WIDE better than 50dB (1 kHz)

NARROW better than 30dB (1 kHz)

FREQUENCY RESPONSE 30 to 15,000 Hz ± 0.5 dB

ANTENNA INPUT IMPEDANCE

..... 75 Ω unbalanced

300 Ω balanced

ANTENNA ATTENUATOR .. 30dB

AM SECTION

TUNING RANGE 535 to 1,605 kHz

SENSITIVITY (Bar antenna) .. 45dB/m (1,000 kHz)

SELECTIVITY better than 70dB (1,000 kHz)

IMAGE REJECTION better than 100dB/m

(1,000 kHz)

IF REJECTION better than 100dB/m

(1,000 kHz)

OTHERS

OUTPUT LEVEL

OUTPUT 0 to 1V

DOLBY FM 0.4V

POWER REQUIREMENTS.... 100, 120, 220, 240V 50/60Hz

120V (Usable 110-130V),

60Hz (For U.S.A. & Canada

only)

POWER CONSUMPTION.... 20W (rated)

DIMENSIONS 460mm (18- $\frac{1}{8}$ ") W

160mm (6- $\frac{5}{16}$ ") H

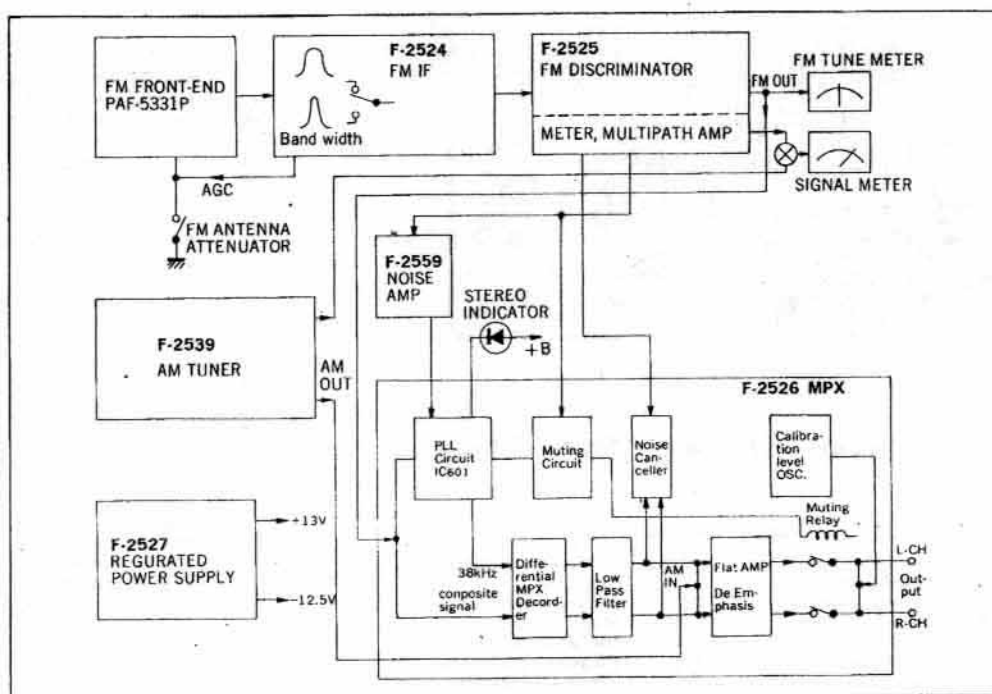
310mm (12- $\frac{1}{4}$ ") D

WEIGHT 9.6 kg (21.2 lbs) net

11.3 kg (24.9 lbs) packed

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

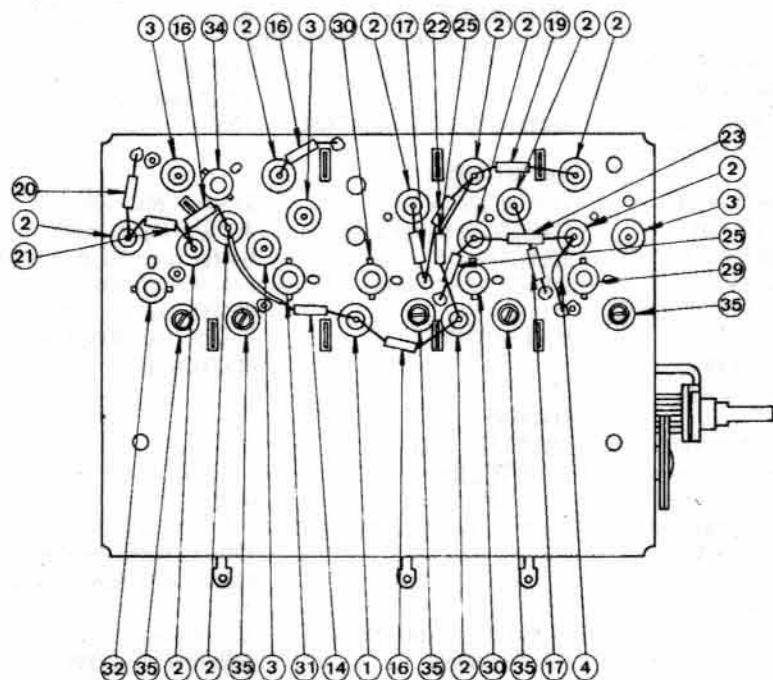
2. BLOCK DIAGRAM



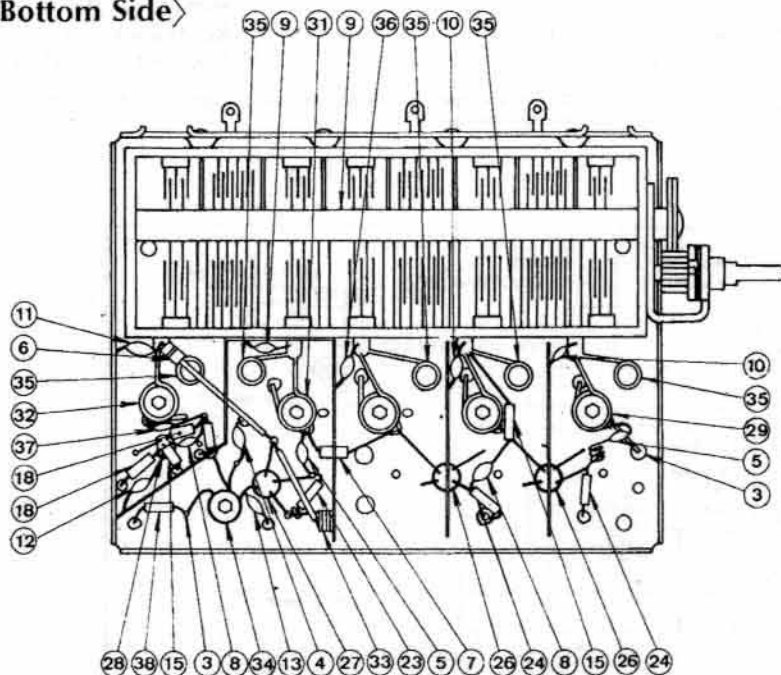
3. PARTS LOCATION AND PARTS LIST

3-1. PA5331P FM FRONT-END PACK (Stock No. 7510701)

<Top Side>



<Bottom Side>



Abbreviations

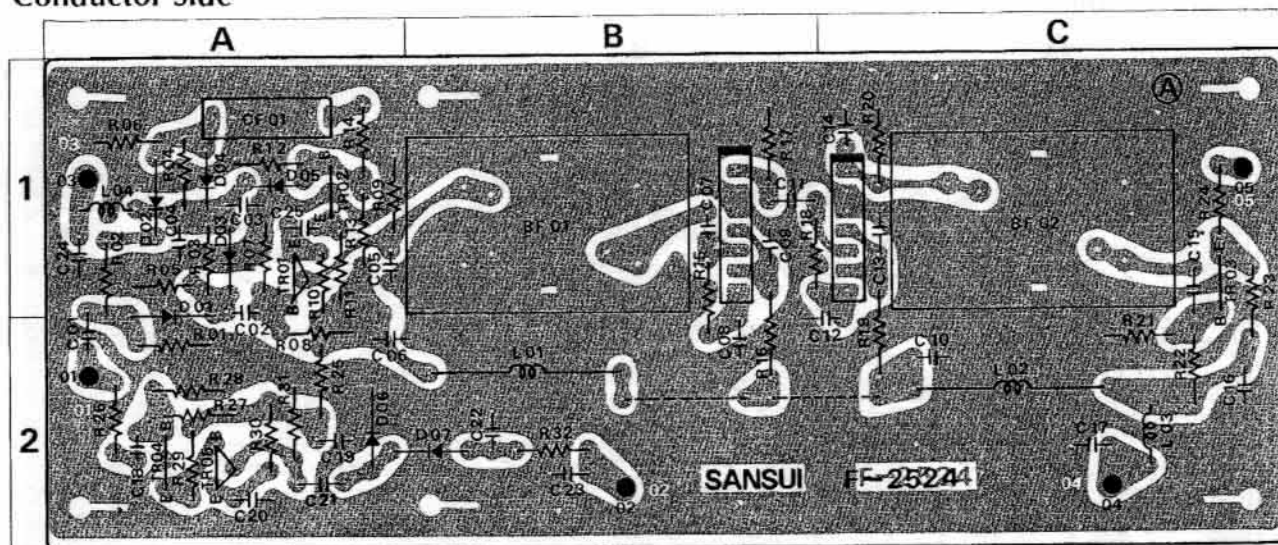
C.R. : Carbon Resistor	BP.E.C.: Bi-Polar Electrolytic Capacitor
S.R. : Solid Resistor	C.C. : Ceramic capacitor
Ce.R. : Cement Resistor	Mi.C. : Mica Capacitor
M.R. : Metallized Film Resistor	O.C. : Oil Capacitor
M.C. : Mylar Capacitor	P.C. : Polystyrene Capacitor
E.C. : Electrolytic Capacitor	T.C. : Tantalum Capacitor

Parts List <Top, Bottom Side>

Position	Parts No.	Stock No.	Description
29	TR01	0305802	2SC1047 C Transistor
30	FT01	0370131	3SK41
	FT02	0370131	3SK41
31	FT03	0370160	3SK39
			FET
17	C01	0669272	12 pF
5	C02	0657102	1000 pF
	C03	0659510	1000 pF
2	C04	0659510	1000 pF
	C05	0659510	1000 pF
4	C06	0657223	22000 pF
1	C07	0659510	1000 pF
8	C08	0669344	8.2 pF
12	C09	0669272	12 pF
	C10	0659510	1000 pF
2	C11	0559510	1000 pF
	C12	0659510	1000 pF
1	C13	0659511	2000 pF
7	C14	0679020	3.3 pF
9	C15	0669275	1.5 pF
5	C16	0657102	1000 pF
16	C17	0669275	1.5 pF
12	C18	0659510	1000 pF
13	C19	0669224	33 pF
4	C20	0657223	22000 pF
2	C21	0659510	1000 pF
18	C22	0669221	22 pF
29	C23	0669344	8.2 pF
2	C24	0659510	1000 pF
	C25	0659510	1000 pF
20	C26	0669225	39 pF
11	C27	0669280	20 pF
5	C28	0679008	1.0 pF
	C29	0659510	1000 pF
	C30	0512100	10 pF
			500V G.C.
			50V C.C.
			10V E.C.
26	R01	0110124	120kΩ
22	R02	0110104	100kΩ
25	R04	0110105	1MΩ
28	R05	0110222	2.2kΩ
23	R06	0110105	1MΩ
27	R07	0110333	33kΩ
15	R08	0110220	22Ω
24	R09	0110124	120kΩ
14	R11	0110121	120Ω
24	R12	0110270	27Ω
23	R13	0110104	100kΩ
19	R14	0110121	120Ω
22	R15	0110391	390Ω
18	R16	0110272	2.7kΩ
21	R17	0113472	4.7kΩ
20	R18	0113822	8.2kΩ
15	R19	0110220	22Ω
16	R20	0110272	2.7kΩ
41	R21	0110121	120Ω
	R22	0110470	47Ω
			1/4W S.R.
29	L01	4200340	Antenna Coil
30	L02	4210070	
	L03	4210070	RF Coil
31	L04	4210210	
27	L05	4220170	OSC Coil
29	L06	4290070	Choke Coil
34	L07	4235740	IF Coil
36	VC01	1220240	AM-FM Variable Capacitor
	TC01	1230080	
	TC02	1230080	
	TC03	1230080	Trimmer
	TC04	1230080	
	TC05	1230080	
		0659507	1.5pF 50V C.C.

3-2. F-2524 FM IF Circuit Board (Stock No. 7521121 Complete Circuit Board F-2524)

Conductor Side

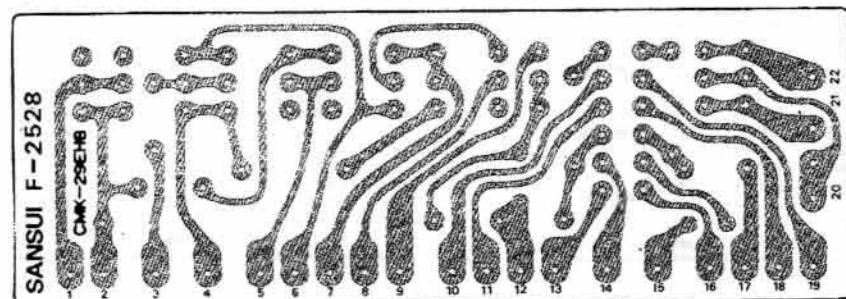


Parts List

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
TR01	0306340, 1	2SC1674 (M, L)	1A	C09	0657223	22000 pF	1B	R13	0113182	1.8kΩ	1A
TR02	0306340, 1	2SC1674 (M, L)	1A	C10	0657223	22000 pF	1C	R14	0113470	47Ω	1A
TR03	0305792	2SC930 (E)	1, 2C	C11	0657103	10000 pF	1B	R15	0113681	680Ω	1B
TR04	0306340, 1	2SC1674 (M, L)	2A	C12	0657223	22000 pF	2B, C	R16	0113220	22Ω	2B
TR05	0305792	2SC930 (E)	2A	C13	0657223	22000 pF	1C	R17	0113102	1.0kΩ	1B
TR06	0306340-2	2SC1674 (MLK)	2A	C14	1230050	Trimmer Capacitor	1C	R18	0113122	1.2kΩ	1B
TR07	0305792	2SC930 (E)	2A	C15	0657103	10000 pF	1C	R19	0113220	22Ω	1, 2C
TR08	0306340-2	2SC1674 (M)	2A	C16	0657223	22000 pF	2C	R20	0113102	1.0kΩ	1C
IC01	0360120	PC555H	IC	C17	0657223	22000 pF	2C	R21	0113152	1.5kΩ	2C
IC02	0360120	PC555H	IC	C18	0660100	10 pF	2A	R22	0113122	1.2kΩ	2C
D01	0310401	1N34A	1A	C19	0657223	22000 pF	2A	R23	0113222	2.2kΩ	1, 2C
D02	0310401	1N34A	1A	C20	0657223	22000 pF	2A	R24	0113680	68Ω	1C
D03	0311160	1S24730	1A	C21	0657103	10000 pF	2A	R25	0113101	100Ω	2A
D04	0311180	1S1588	1A	C22	0657223	22000 pF	2B	R26	0113472	4.7kΩ	2A
D05	0311160	1S24730	1A	C23	0657223	22000 pF	2B	R27	0113392	3.9kΩ	2A
D06	0311180	1S1588	1A	C24	0657223	22000 pF	1A	R28	0113152	15kΩ	2A
D07	0310330, 1	1N60	2A	C25	0620471	470 pF	1A	R29	0113222	2.2kΩ	2A
D08	0310330, 1	1N60	2B	R01	0113102	1.0kΩ	2A	R30	0113681	680Ω	2A
C01	0657103	10000 pF	1, 2A	R02	0113181	180Ω	1A	R31	0113102	1.0kΩ	2A
C02	0657223	22000 pF	2A	R03	0113152	1.5kΩ	1A	R32	0113154	150kΩ	2B
C03	0657223	22000 pF	1A	R04	0113152	1.5kΩ	1A	R33	0113223	22kΩ	2B
C04	0657223	22000 pF	1A	R05	0113103	10kΩ	1A	L01	4290011	Choke Coil	2B
C05	1230050	Trimmer Capacitor	1A	R06	0113103	10kΩ	1A	L02	4290011	Choke Coil	2C
C06	0657223	22000 pF	2A, B	R07	0113562	5.6kΩ	1A	L03	4900200	Inductor	2C
C07	0657103	10000 pF	1B	R08	0113182	1.8kΩ	2A	L04	4900200	Inductor	1A
C08	0657223	22000 pF	2B	R09	0113102	1.0kΩ	1A	CF01	0910320	Ceramic Filter	1A
				R10	0113271	270Ω	1A	BF01	4235960	IF Coil	1B
				R11	0113122	1.2kΩ	1A	BF02	4235960	IF Coil	1C
				R12	0113562	5.6kΩ	1A				

3-3. F-2528 Switch Circuit Board (Stock No. 7592781 Complete Circuit Board F-2528)

Conductor Side

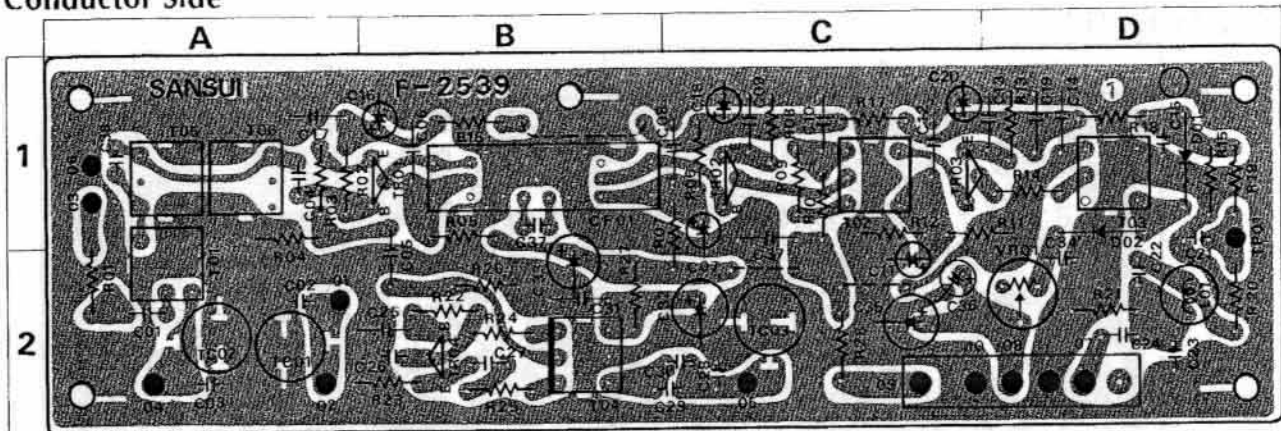


Parts List

Parts No.	Stock No.	Description
R01	0103152	1.5kΩ 1/4W C.R.
R02	0113101	100Ω
R03, 04	0113102	1.0kΩ
R05, 06	0113183	18kΩ 1/4W S.R.
R07	0113470	47Ω
R08	0113681	680Ω
S02	1131130	Push Switch

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
TR01	0306300	25C1360	1 B	C18	0532100	10µf 16V E.C.	1 C	R14	0113223	22kΩ	1 C
TR02	0306300	25C1360	1 B	C19	0660470	47 pf	1 C	R16	0113472	4.7kΩ	2 A
TR03	0306340, 1	25C1674 (M, L)	2 A	C20	0660101	100 pf	1 C	R17	0113153	15kΩ	2 A
TR04	0306340, 1	25C1674 (M, L)	2 A	C21	0657223	22000 pf	1 C	R18	0113681	680Ω	2 A
TR05	0306340, 1	25C1674 (M, L)	2 B	C22	0657223	22000 pf	1 C	R19	0113222	2.2kΩ	2 A
	0305310	25C458LG (B)		C23	0657103	10000 pf	2 A	R20	0113220	22Ω	2 A
TR06	0305951-3	25C945 (O, P, K)	2 B	C24	0657223	22000 pf	2 A	R21	0113472	4.7kΩ	2 A
	0306131-3	25C1364 (6, 7, 8)		C25	0657223	22000 pf	2 A	R22	0113153	15kΩ	2 A
				C26	0620101	100 pf	50V P.C.	R23	0113102	1.0kΩ	2 A
IC01	0360270	µPC-577H IC	1 A	C27	0669224	33 pf	2 A	R24	0113681	680Ω	2 A
IC02	0360120	µPC-555H IC	1 A	C28	0657223	22000 pf	2 A	R25	0113122	1.2kΩ	2 A, B
				C29	0660221	220 pf	2 A	R26	0113472	4.7kΩ	2 B
D01	0310330, 1	1N60	2 A	C30	0657223	22000 pf	2 A	R27	0113153	15kΩ	2 B
D02	0310330, 1	1N60	2 A	C31	0657223	22000 pf	50V C.C.	R28	0113681	680Ω	2 B
D03	0310330, 1	1N60	2 A	C32	0669224	33 pf	2 A	R29	0113471	470Ω	2 B
D04	0310330, 1	1N60	2 A	C33	0660221	220 pf	2 B	R30	0113103	10kΩ	2 B
	0311160	1524730		C34	0657223	22000 pf	2 B	R31	0113823	82kΩ	2 B
	0311180	151588	2 A	C35	0620101	100 pf	50V P.C.	R32	0113471	470Ω	2 B
	0311160	1524730		C36	0657223	22000 pf	50V C.C.	R33	0113332	3.3kΩ	2 B
D06	0311180	151588	2 A	C37	0669264	3.3 pf	50V C.C.	R34	0113222	2.2kΩ	2 C
D07	0310330, 1	1N60	2 B	C38	0512100	10µf	16V E.C.	R35	0113222	2.2kΩ	2 C
D08	0310330, 1	1N60	2 B	C39	0657223	22000 pf	50V C.C.	R36	0113562	5.6kΩ	2 B
D09	0310330, 1	1N60	2 C	C40	0515109	1µf	50V E.C.	R37	0113222	2.2kΩ	2 C
D10	0310331	1N60	2 B, C	C41	0657223	22000 pf	50V C.C.	R38	0113222	2.2kΩ	2 C
D11	0310331	1N60	2 B, C	C42	0514339	3.3 pf	35V E.C.	R40	0113220	22Ω	1, 2 A
	0311160	1524730		C43	0514339	3.3 pf	2 B				
D12	0311180	151588	2 C	C44	0657223	22000 pf	2 C	L01	4900200	Inductor	1 A
				C45	0657223	22000 pf	2 B	L02	4900200	Inductor	1 A
C01	0657103	10000 pf	1 A	C46	0657223	22000 pf	50V C.C.	L03	4290011		1 A, B
C02	0657223	22000 pf	50V C.C.	C47	0657223	22000 pf	2 C	L04	4290011		1 B, C
C03	0657223	22000 pf	1 A	C48	0657223	22000 pf	1, 2 C	L05	4290011		1 B, C
C04	0657223	22000 pf	1 A	C49	0657223	22000 pf	1, 2 C	L06	4290011		2 A, B
C05	0512100	10µf	16V E.C.	R01	0113102	1.0kΩ	1 A	L07	4900200	Inductor	2 A
C06	0657223	22000 pf	1 A	R02	0113102	1.0kΩ	1 A	L08	4900200	Inductor	2 A, B
C07	0657103	10000 pf	1 A	R03	0113102	1.0kΩ	1 A				
C08	0657223	22000 pf	1 A	R04	0113472	4.7kΩ	1 A				
C09	0657223	22000 pf	1 A	R05	0113101	100Ω	1 B	T01	4235860		1 B
C10	0657223	22000 pf	1 A	R06	0113821	820Ω	1 B	T02	4235950		1 B
C11	0657223	22000 pf	1 A	R07	0201391	390Ω	1 W C.R.	T03	4235940		2 B
C12	0657223	22000 pf	1 B	R08	0113330	33Ω	1 B	T04	4235940		2 B
C13	0657223	22000 pf	1 B	R09	0113330	33Ω	1 B				
C14	0657223	22000 pf	1 B	R10	0113821	820Ω	1 B	VR01	1035130	10kΩ (B)	1 C
C15	0657223	22000 pf	1 B	R11	0113122	1.2kΩ	1 C	VR02	1035130	10kΩ (B)	1, 2 A
C16	0660221	220 pf	1 C	R12	0113122	1.2kΩ	1 C	VR03	1035170	10kΩ (B)	2 C
C17	0660221	220 pf	1 C	R13	0113101	100Ω	1 C		2410590	4P Pin Ass'y Type D	

3-5. F-2539 AM IF Circuit Board (Stock No. 7530281 Complete Circuit Board F-2539) Conductor Side

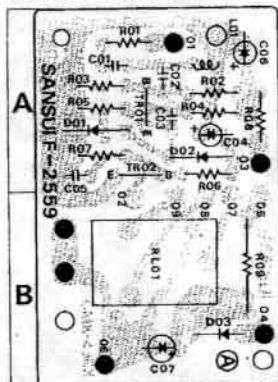


Parts List

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
TR01	0306241, 2	2SC1675 (L, K)	1 B	C24	0601227	0.022 μ F 50V M.C.	2 D	R18	0113153	15k Ω	1 D
TR02	0306241, 2	2SC1675 (L, K)	1 C	C25	0657473	47000 μ F 50V C.C.	2 B	R19	0113103	10k Ω	1 D
TR03	0306131, 2	2SC1364 (6, 7)	1 C	C26	0601000	10 μ F 50V M.C.	2 B	R20	0113103	10k Ω	2 D
TR04	0306241, 2	2SC1675 (L, K)	2 B	C27	0601107	0.01 μ F 50V M.C.	2 B	R21	0113103	10k Ω	2 D
D01	0310330, 1	1N460	1 D	C28	0669281	22 μ F 50V C.C.	2 C	R22	0113334	330k Ω	2 B
D02	0310330, 1	1N460	1 D	C29	0669280	20 μ F 50V C.C.	2 B, C	R23	0113102	1.0k Ω	2 A, B
C01	0660221	220 μ F 50V C.C.	2 A	C30	0620431	430 μ F 50V P.C.	2 C	R24	0113561	560 Ω	2 B
C02	0669270	10 μ F 50V C.C.	2 A	C31	0657473	47000 μ F 50V C.C.	2 C	R25	0113100	10 Ω	2 B
C03	0669270	10 μ F 50V C.C.	2 A	C32	0512470	47 μ F 16V E.C.	2 C	R26	0113101	100 Ω	2 B
C04	0657223	22000 μ F 50V C.C.	1 A	C33	0512100	10 μ F 16V E.C.	2 B	R27	0113332	3.3k Ω	2 B
C05	0601477	0.047 μ F 50V M.C.	1, 2 B	C34	0601476	0.0047 μ F 50V M.C.	2 D	R28	0113470	47 Ω	2 C
C06	0657473	47000 μ F 50V C.C.	1 B	C35	0510101	100 μ F 6.3V E.C.	2 C	R29	0103122	1.2k Ω 1/2W S.R.	
C07	0515109	1 μ F 50V E.C.	1, 2 C	C36	0510101	100 μ F 6.3V E.C.	2 C	L01	4900220	Inductor 100M	2 D
C08	0657473	47000 μ F 50V C.C.	1 C	C37	0657473	47000 μ F 50V C.C.	1, 2 C	L701	4200540	Bar Antenna 220 μ H	
C09	0657473	47000 μ F 50V C.C.	1 C	R10	0113101	100 Ω	2 A	T01	4210180	RF Coil	1, 2 A
C10	0657473	47000 μ F 50V C.C.	1 C	R02	0113103	10k Ω	1 B	T02	4230610	IF Coil 455kHz	1 C
C11	0515109	1 μ F 50V E.C.	2 C	R03	0113220	22 Ω	1 A	T03	4230500	IF Coil 455kHz	1 D
C12	0657473	47000 μ F 50V C.C.	1 C	R04	0113102	1.0k Ω	2 A	T04	4220480	OSC Coil 115 μ H	2 B
C13	0601827	0.082 μ F 50V M.C.	1 D	R05	0113221	22 Ω	1 B	CF01	0910310	Ceramic Filter 455kHz	1 B
C14	0657473	47000 μ F 50V C.C.	1 D	R06	0113332	3.3k Ω	1 C	VR01	1035170	47k Ω B Volume	2 D
C15	0601127	0.012 μ F 50V M.C.	1 D	R07	0113104	100k Ω	1, 2 C	TC01	1230060	Trimmer Condenser	2 A
C16	0515109	1 μ F 50V E.C.	1 B	R08	0113102	1.0k Ω	1 C	TC02	1230060	Trimmer Condenser	2 A
C17	0657473	47000 μ F 50V C.C.	1 A	R09	0113333	33k Ω 1/4W S.R.	1 C	TC03	1230060	Trimmer Condenser	2 C
C18	0513479	4.7 μ F 25V E.C.	1 C	R10	0113221	220 Ω	1 C				
C19	0657473	47000 μ F 50V C.C.	1 D	R11	0113393	39k Ω	1 D				
C20	0513479	4.7 μ F 25V E.C.	1 C	R12	0113682	6.8k Ω	1 D				
C21	0601276	0.0027 μ F 50V M.C.	1, 2 D	R13	0113151	150 Ω	1 D				
C22	0601107	0.01 μ F 50V M.C.	2 D	R14	0113331	330 Ω	1 D				
C23	0601276	0.0027 μ F 50V M.C.	2 D	R15	0113103	10k Ω	1 D				
				R16	0113222	2.2k Ω	1 B				
				R17	0113222	2.2k Ω	1 C				

3-6. F-2559 MPX Noise AMP. Circuit Board (Stock No. 7540781 Complete Circuit Board F-2559) Conductor Side

Conductor Side



Parts List

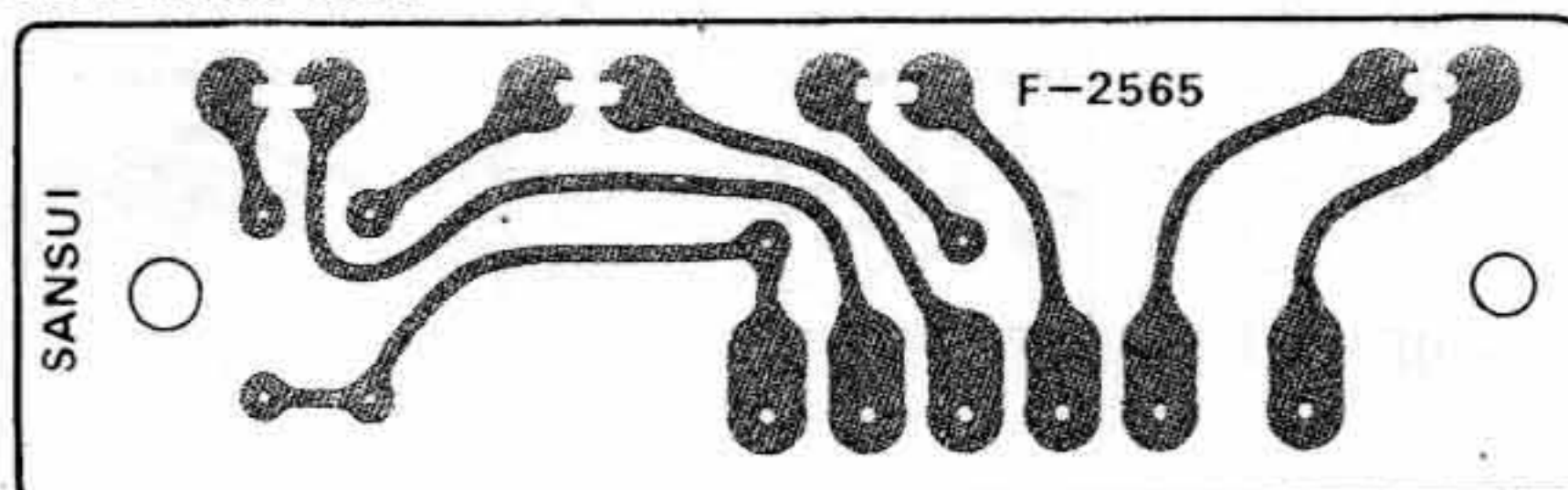
Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
TR01	0305310	2SC458LG (B)	A	R01	0113103	10k Ω	A
TR02	0305951-3	2SC945 (G, F, K)	A	R02	0113104	100k Ω	A
	0306131-3	2SC1364 (6, 7, 8)	A	R03	0113153	15k Ω	A
	0300510, 1	2SA733 (P, Q)	A	R04	0113222	2.2k Ω	A
D01	0310400	1N34A	A	R05	0113471	470 Ω	A
D02	0310810	SD46 (9)	A	R06	0113103	10k Ω	A
D03	0310400	1N34A	A	R07	0113273	27k Ω	A
	0310810	SD46 (9)	A	R08	0113470	47 Ω	A
	0310880	10D 05	B	R09	0103151	150 Ω 1/2W C.R.	B
C01	0660221	222 μ F	A	L01	4900090	Inductor	A
C02	0660221	220 μ F 50V C.C.	A		2260010	Test Pin	
C03	0657102	1000 μ F	A		2410570	5P Pin Ass'y Type D	
C04	0519105	2.2 μ F 50V E.C.	A				
C05	0657102	1000 μ F 50V C.C.	A				
C06	0515109	1 μ F 50V E.C.	A				
C07	0511470	47 μ F 10V E.C.	B				

Parts List

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
TR401	0306091.2	2SC1312R (G, H)	1A	C614	0601337	0.033 μ F 50V M.C.	1A	R628	0113152	1.5k Ω	2A
TR402	0306091.2	2SC1312R (G, H)	1, 2A, B	C615	0512330	33 μ F 16V E.C.	1B	R629	0113470	47 Ω	2B
TR403	0306371.2	2SC1175 (E, F)	2B	C616	0519109	0.22 μ F	1B	R630	0113102	1.0k Ω	1A
TR404	0300510.1	2SA733 (P, Q)	1, 2B	C617	0519101	1 μ F 50V E.C.	1B	R631	0113103	10k Ω	1A
TR405	0306091.2	2SC1312R (G, H)	2A	C618	0519105	2.2 μ F	1B	R632	0113104	100k Ω	1A
TR406	0306091.2	2SC1312R (G, H)	2A	C619	0620471	470pF 50V P.C.	1B	R633	0113103	10k Ω	1A
TR407	0306091.2	2SC1312R (G, H)	2A	C621	0513479	4.7 μ F 25V E.C.	1B	R634	0113272	2.7k Ω	1A
TR408	0305310	2SC458LG (B)	1A	C622	0657103	10000pF 50V C.C.	3B	R635	0113563	56k Ω	1A
TR409	0305951-3	2SC945 (Q, P, K)	1A	C623	0512100	10 μ F	4A	R636	0113391	390 Ω	1A
TR410	0306131-3	2SC1364 (6)	1A	C624	0512100	10 μ F	3B	R637	0113223	22k Ω	1A
TR411	0300510.1	2SA733 (P, Q)	1A	C625	0573109	1.0 μ F	3B	R638	0113332	3.3k Ω	1A
TR412	0306132.3	2SC1364 (7, 8)	1B	C626	0573478	0.47 μ F	3B	R639	0113102	1.0k Ω	1A
TR413	0305952.3	2SC945 (P, K)	3B	C627	0601477	0.047 μ F	3B	R640	0113473	47k Ω	1B
TR414	0306132.3	2SC1364 (7, 8)	3B	C628	0601396	0.0039 μ F	3B	R641	0113102	1.0k Ω	1B
TR415	0300450	2SA493 (G, R)	3B	C629	0532100	10 μ F	3B	R642	0107153	15k Ω	1B
TR416	0300510.1	2SA733 (P, Q)	3B	C630	0512100	10 μ F	2A	R643	0113392	3.9k Ω	1B
TR417	0306132.3	2SC1364 (7, 8)	4A	C631	0512100	10 μ F	3B	R644	0113222	2.2k Ω	1B
TR418	0305952	2SC945 (P)	3B	C632	0512221	220 μ F	1A, B	R645	0113271	270 Ω	1B
TR419	0306132	2SC1364 (7)	3B	C634	0601227	0.022 μ F 50V M.C.		R646	0113152	1.5k Ω	1B
TR420	0305951.2	2SC945 (Q, P)	3B	C635	0512100	10 μ F 16V E.C.		R647	0113563	56k Ω	1B
TR421	0306131.2	2SC1364 (6, 7)	3B	C636	0600396	0.0039 μ F 50V M.C.		R648	0113472	4.7k Ω	2B
IC01-02	0360280	TA-7136P IC	3, 4AB, 4A, B	R01, 02	0113472	4.7k Ω	2A	R649	0113223	22k Ω	3, 4B
IC601	0360300	HA1156V IC		R03, 04	0113103	10k Ω	2A	R650	0113332	3.3k Ω	3B
D601	0311160	1S2473D	2B	R05, 06	0113472	4.7k Ω	4A	R651	0113331	330 Ω	3B
D602	0311160	1S1588	2B	R07, 08	0113223	22k Ω	3A	R652	0113152	1.5k Ω	2B
D603	0311160	1S2473D	2B	R09, 10	0113473	47k Ω	4A	R653	0113333	33k Ω	3B
D604	0311160	1S1588	2B	R11, 12	0113223	22k Ω	3B, 4B	R654	0113473	47k Ω	3B
D605	0311160	1S2473D	2B	R13, 14	0113272	2.7k Ω	3A, 4A, B	R655	0113151	150 Ω	2, 3B
D606	0311160	1S1588	2B	R15, 16	0113473	47k Ω	4A, B	R656	0113473	47k Ω	3B
D607	0311160	1S2473D	2B	R17, 18	0113104	100k Ω	4B	R657	0113223	22k Ω	4A
D608	0311160	1S1588	2B	R19, 20	0113333	33k Ω	3B	R658	0113390	39 Ω	4A
D609	0310400	1N34A	3B	R21, 22	0113331	330 Ω	4B	R659	0113224	220k Ω	2A
D610	0310400	1N34A	4A	R23, 24	0113223	22k Ω	4B	R660	0103561	560 Ω	1/2W C.R.
D611	0310880	100 05	4B	R25, 26	0113103	10k Ω	4B	R661	0113561	560 Ω	4A
PC601	0920060	Photo cell Lamp	4A	R601	0113102	1.0k Ω	1A	R662	0113561	560 Ω	4A
C01, 02	0519104	1.5 μ F 50V E.C.	2A	R602	0113104	100k Ω	1A	R663	0113563	56k Ω	3B
C03, 04	0660221	22pF 50V C.C.	4A	R603	0113332	3.3k Ω	1A	R664	0113222	2.2k Ω	3B
C05, 06	0511470	47 μ F 10V E.C.	3A, 4A, B	R604	0113103	10k Ω	1A, B	R665	0113121	120 Ω	3B
C07, 08	0660560	56pF 50V C.C.	3B, 4, AB	R605	0113392	3.9k Ω	2B	R666	0113273	27k Ω	3B
C09, 10	0620102	1000pF 50V P.C.	3B, 4, B	R606	0113472	4.7k Ω	2B	R667	0113104	100k Ω	3B
C13, 14	0620621	620pF	4A, 4A, B	R607	0113330	33 Ω	2B	R668	0113472	4.7k Ω	3B
C15, 16	0532100	10 μ F 16V E.C.	4B	R608	0113331	330 Ω	2B	L601	4900220	Inductor	3A, B
C17, 18	0601226	0.0022 μ F 50V M.C.	4B	R609	0113470	47 Ω	2B	T601	4240730	47MH MPX Coil	2B
C19, 20	0660101	100pF 50V C.C.	1A	R610	0113153	15k Ω	1B	LF01	0910300	Ceramic Filter BL-14	
C601	0532100	10 μ F	1A	R611	0113223	22k Ω	2B	LF02	0910290	Ceramic Filter BL-5	
C602	0512100	10 μ F	1A	R612	0113471	470 Ω	2B	RL601	1150320	Relay Switch	4B
C603	0515109	1 μ F 50V E.C.	1B	R613	0113122	1.2k Ω	2B	VR601	1035150	22k Ω B	1A
C604	0512100	10 μ F	1B	R614	0113'22	1.2k Ω	2B	VR602	1035030	220 Ω B	2A
C605	0512330	33 μ F	1B	R615	0231104	100k Ω	2A, B	VR603	1034270	10k Ω B	1B
C606	0512330	33 μ F	1B	R616	0231104	100k Ω	2A, B	VR604	1035170	47k Ω B	3B
C607	0512100	10 μ F	2B	R617	0231104	100k Ω	2B	VR605	1035170	47k Ω B	3B
C608	0512330	33 μ F	1, 2A	R618	0231103	10k Ω	2A, 3	S01	1110270	Slide Switch	
C609	0620681	680pF 50V P.C.	1A	R619	0231103	10k Ω	2A, 3		2260010	Test Pin	
C610	0660220	22pF 50V C.C.	1A	R620	0231103	10k Ω	2A, 3		2410570	5P Pin Ass'y Type D	
C611	0513479	4.7 μ F 25V E.C.	1A	R621	0231103	10k Ω	2A, 3		2410580	3P Pin Ass'y Type D	
C612	0512100	10 μ F 16V E.C.	1A	R622	0231103	10k Ω	2A, 3		2410600	6P Pin Ass'y Type D	
C613	0535109	1 μ F 50V E.C.	1A	R623	0231103	10k Ω	2A, 3		2410650	2P Pin Ass'y Type D	
				R624	0113154	150k Ω	2A				
				R625	0113563	56k Ω	1A				
				R626	0113561	560 Ω	2A				
				R627	0113561	560 Ω	2A				

3-8. F-2565 Indicator Circuit Board (Stock No. 7592801 Complete Circuit Board F-2565)

Conductor Side



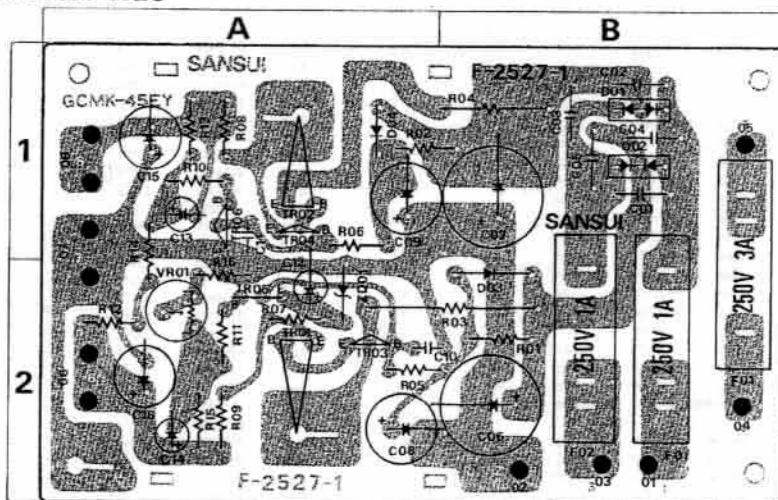
Parts List

Parts No.	Stock No.	Description
LD01	0319060	SG2-12C
LD02, 03	0319050	SG2-13C
LD04	0319060	SG2-12C
		Light Emitted Diode
R01	0113152	1.5k Ω
R02	0113102	1.0k Ω
R03	0113102	1.0k Ω
		1/4W S.R.

3-9. F-2552 Illumination Circuit Board (Stock No. 7592791 Complete Circuit Board F-2552)

*This F-2552 is only a printed circuit board without any component parts.

3-10. F-2527 Power Supply Circuit Board (Stock No. 7501101 Complete Circuit Board F-2508) Conductor Side



Parts List

Parts No.	Stock No.	Description	Position
TR01	0308411-3	2SD314 (D, E, F)	2A
TR02	0308411-3	2SD314 (D, E, F)	1A
TR03	0305951, 2	2SC945 (Q, P)	2A
	0306131, 2	2SC1364 (6, 7)	
TR04	0300220, 1	2SA452 (O, Y)	1A
	0300510, 1	2SA733 (F, Q)	
TR05	0305310	2SC458 (LG)(B)	2A
	0304091, 2	2SC1312 (G, H)	

Parts No.	Stock No.	Description	Position
TR06	0300410, 1	2SA726R (F, G)	1A
	0300450	2SA493 (GR)	
D01	0310530	1S1850	1B
	0311420	C08P-2-H	
D02	0310540	1S1850R	1B
	0311430	C08P-2-R	
D03, 04	0310880	100 05	2B, 1A

Parts No.	Stock No.	Description	Position
ZD01	0315530 0316390	8D-6A 8D-2E (B)	2A
C01	0657473	47000µF 50V C.C.	1B
C06	0514471	470µF 35V E.C.	2A, B
C07	0514471	470µF	1B
C08	0513221	220µF 25V E.C.	2A, B
C09	0513221	220µF	1A
C10	0657103	10000µF 50V C.C.	2A, B
C11	0657103	10000µF	1A
C12	0511470	47µF 10V E.C.	1, 2A
C13	0512100	10µF	1A
C14	0512100	10µF	2A
C15	0512330	33µF 16V E.C.	1A
C16	0512221	220µF	2A
R01	0113822	8.2kΩ	2B
R02	0113822	8.2kΩ	1A, B
R03	0104100	10Ω	2A, B
R04	0104479	4.7kΩ	1B
R05	0113822	8.2kΩ	2A, B
R06	0113822	8.2kΩ	1A
R07	0113222	2.2kΩ	2A
R08	0113229	2.2Ω	1A
R09	0113229	2.2Ω	2A
R10	0113471	470Ω	1A
R11	0113471	470Ω	2A
R12	0113123	12kΩ	2A
R13	0113123	12kΩ	1A
R14	0113152	1.5kΩ	1, 2A
R15	0113562	5.6kΩ	2A
R16	0113472	4.7kΩ	2A
VR01	1035110	4.7kΩ (B)	2A
F01, 02	0431222	AC Fuse 1A 250V	1, 2B
F03	0431260	AC Fuse 3A 250V	1, 2B
	2310050	P Type Fuse Holder	
	2410650	2P Pin Assy Type D	

3-11. Figures Semiconductor

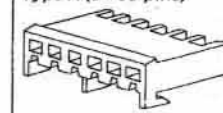
SEMICONDUCTORS	COMPLETE CIRCUIT BOARD	SEMICONDUCTORS	COMPLETE CIRCUIT BOARD
2SA233 2SC945 2SC1047 2SC1360 2SC1364 2SC1674 2SC1675	F-2556 F-2557 F-2559 FM Pack F-2525 F-2524	2SA493 2SA562	F-2527 F-2526
2SA726 2SC1312	F-2527 F-2526	2SC458	F-2559
2SC930	F-2524	TA-7136P	F-2556
3SK39 3SK41	FM Pack	PC555H PPC577H	F-2525
2SD314	F-2527	HA-1156W	F-2526

SEMICONDUCTORS	COMPLETE CIRCUIT BOARD
1N34A 1N60	F-2524 F-2525 F-2526 F-2529
10D05	F-2526 F-2527 F-2559
SD46	F-2559
1S1588 1S2479D	F-2524 F-2525 F-2526
RD6A RD6B	F-2527
1S1850 1S1850R	F-2527

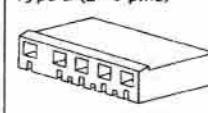
Connector & Pin Ass'y

Connector

Type A (3~10 pins)



Type B (2~6 pins)



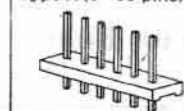
Stock No.

2 Pins	2420250
3 Pins	2420220
4 Pins	2420230
5 Pins	2420210
6 Pins	2420240

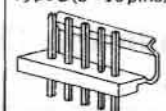
NOTE: Since stock number of female connectors (type B) with wires are not shown in each parts list of Complete circuit board, please refer to the above parts list when ordering the connector.

Pin Ass'y

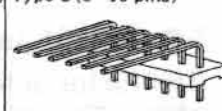
Type A (3~10 pins)



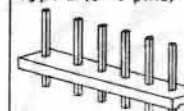
Type B (3~10 pins)



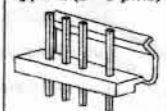
Type C (3~10 pins)



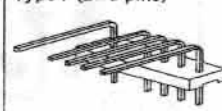
Type D (2~6 pins)



Type E (2~6 pins)

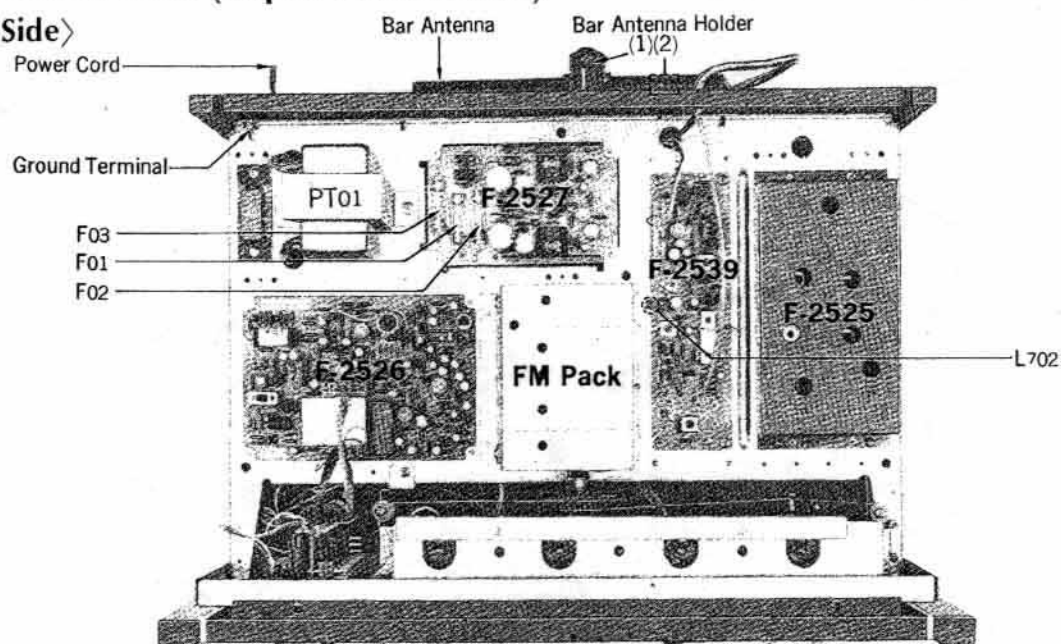


Type F (2~6 pins)

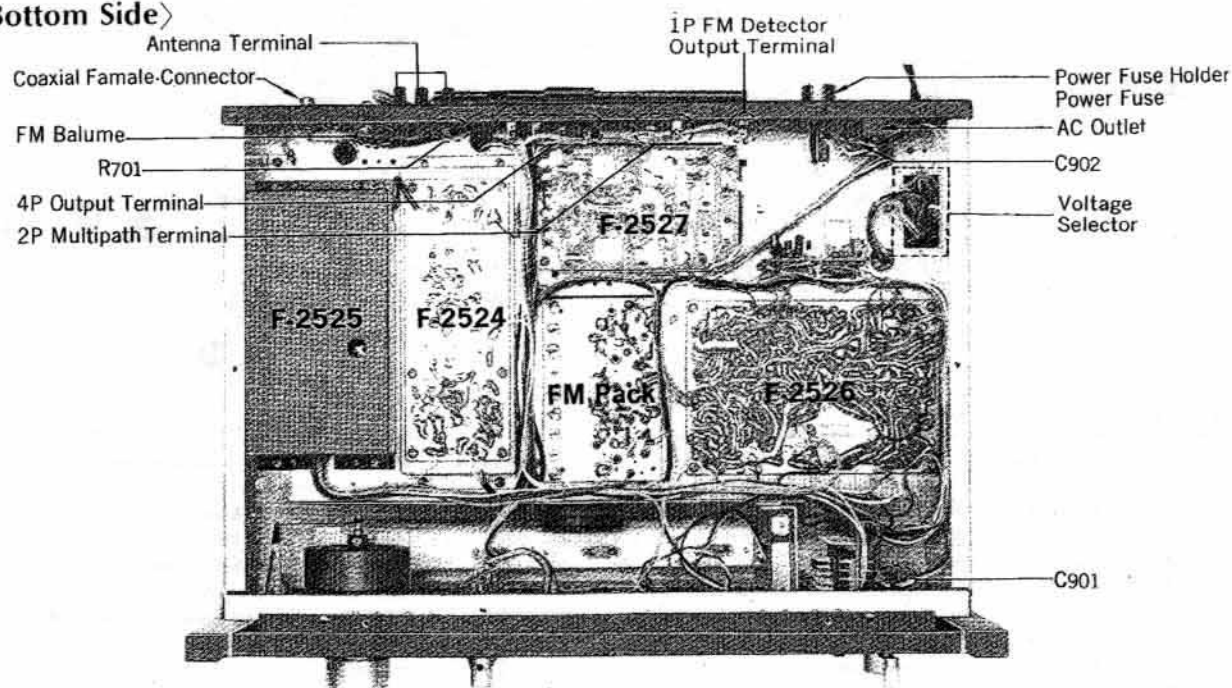


3-12. Other Parts (Top & Bottom Side)

<Top Side>



<Bottom Side>

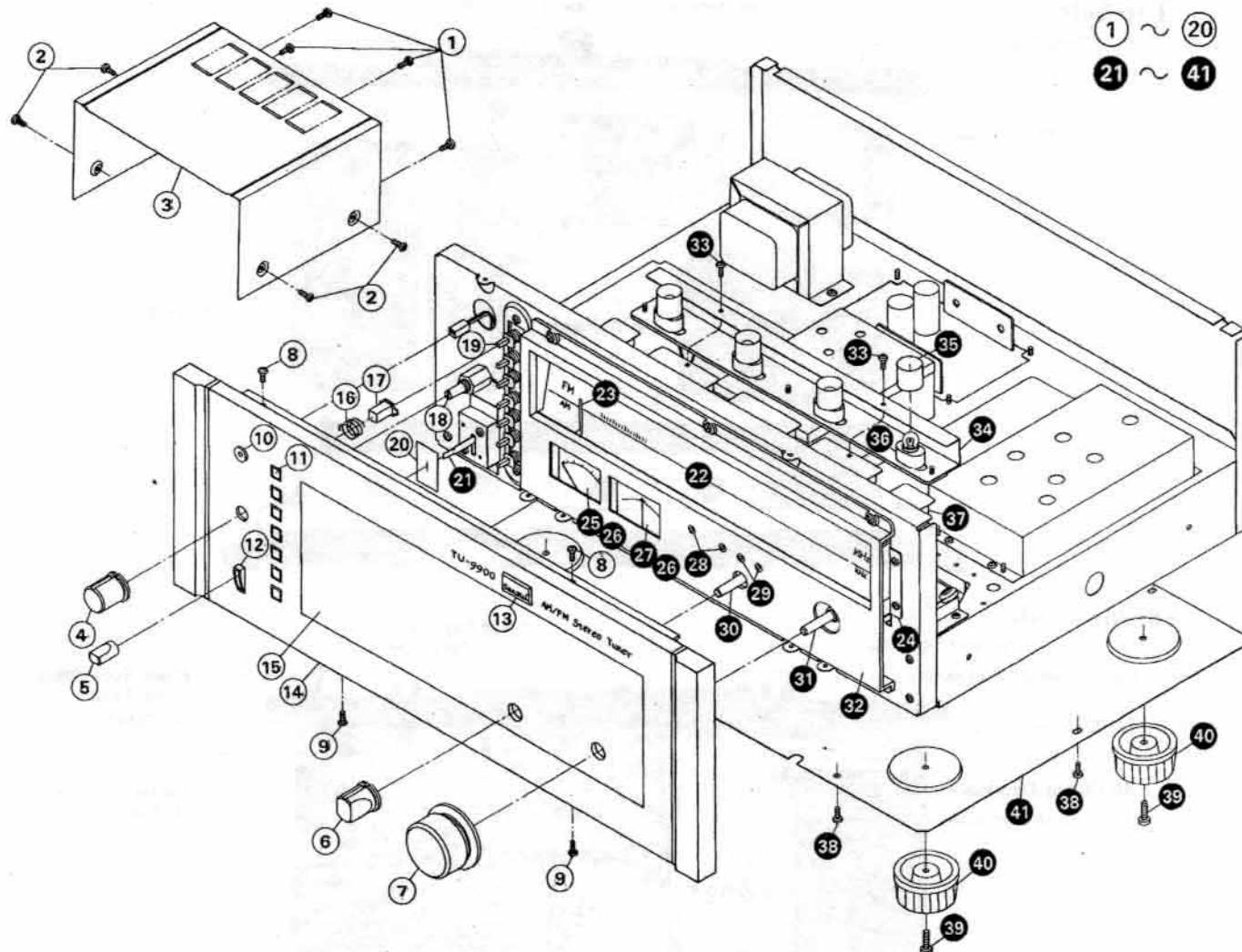


Parts List

Parts No.	Stock No.	Description
C0701	2450060	AC Outlet
L702	4290011	Choke Coil
C901	0659801	0.01 μ F C.C.
C902	0659802	0.047 μ F C.C.
R701		1.2k Ω C.R.
	2230051	Ground Terminal
	3800260	Power Cord
	4200540	Bar Antenna
	5286450	Bar Antenna Holder (1)
	5286480	Bar Antenna Holder (2)
PT01	4002300	Power Transformer

Parts No.	Stock No.	Description
	2410081	Voltage Selector Plug
	2410091	Voltage Selector Socket
F01	0431222	1A 250V AC Fuse
F02	0431222	1A 250V AC Fuse
F03	0431260	3A 250V AC Fuse
	2440020	Coaxial Female Connector F-P-3C
	4290021	75 Ω : 300 Ω FM Balun
	2210190	Antenna Terminal
	2200310	4P Output Terminal
	2200300	2P Multipath Terminal
	2200290	1P Detector Out Terminal
	2300060	Fuse Holder, Power
F401	0431210	Power Fuse 0.5A 250V

3-13. Other Parts (Front Side)



Parts List

Parts No.	Stock No.	Description
1	5109222	Binding Head Tapping Screw M3×8
2	5101161	Binding Head Screw, M4×6
3	5006490	Bonnet
4	5318251	B-6 Type Knob, Output level volume
5	5326510	E-2 Type Knob, Power Switch
6	5318260	C-6 Type Knob, Selector Switch
7	5318350	O-6 Type Knob, Tuning
8	5109122	Binding Head Tapping Screw, M3×8
9	5109222	Binding Head Tapping Screw, M3×8
10	7726410	Stereo Indicator Ass'y
11	5286720	Knob Guide
12	5286730	Lever Guide
13	5336580	Sansui Mark
14	7007130	Front Panel Ass'y
15	5047850	Smoked Plate
16	6906480	Spring
17	5326530	Push Knob
18	1011080, 1	Output Level Volume, 10kΩ BYZ
19	1131130	Push Knob
20	5047460	Masking, Lever Switch
21	1170330	Lever Switch, Power

Parts No.	Stock No.	Description
22	5407910	Dial Scale
23	5416410	Dial Pointer
24	5026290	Illumination Box
25	4300900	Signal Meter
26	7726040	Meter Lamp Unit (PL05~08)
27	4300890	Tune Meter
28	0319060	L.E.D 01, 04 (Red)
29	0319050	L.E.D 02, 03 (Green)
30	1101690, 1	Selector Switch, F-1-4-3
31	7036460	Tuning Unit
32	5304140	Dial Scale Holder
33	5109122	Binding Head Tapping Screw, M3×8
34	5226140	Lamp Holder
35	5037520	Blue Filter
36	7726130	Lamp Ass'y, 8V 0.3A (PL01~04)
37	5047830	Illumination Plate
38	5109222	Binding Head Tapping Screw, M3×8
39	5101063	Binding Head Screw, M4×10
40	5517050	Leg
41	5058500	Bottom Plate

4. ALIGNMENTS AND ADJUSTMENTS

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.

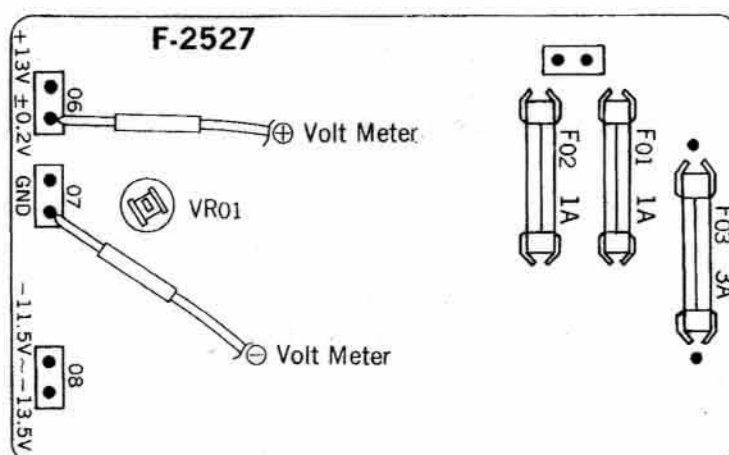
Others

Clockwise CW.
 Counterclockwise CCW.
 Antenna ANT.
 Modulation MOD.

4-1. Regulated Power Supply Voltage Circuit Board Adjustment

STEP	SUBJECT	EQUIPMENT	MEASURE OUTPUT	ADJUST	ADJUST FOR
1.	Voltage Adj.	DC Volt Meter	06, 07 Terminal of F-2527	VR01 F-2527	+13V $\pm 0.2V$

Fig. 4-1

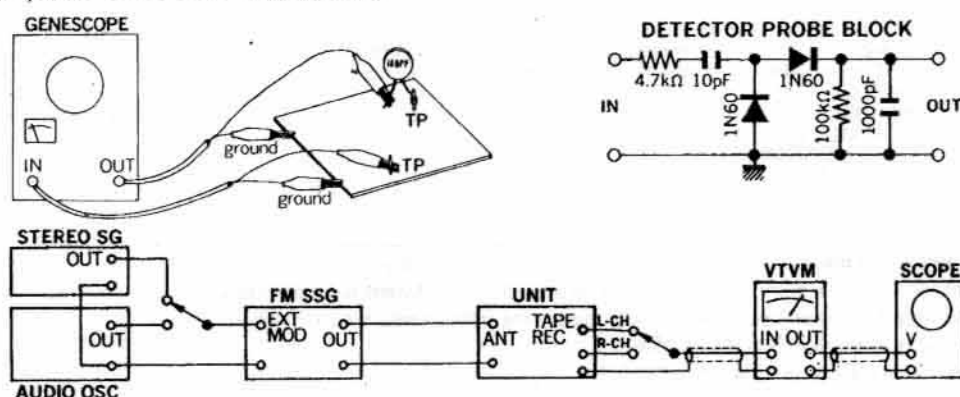


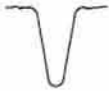
4-2. FM IF Adjustment & Tracking

(See Fig. 4-2, 4-3 on page 13 & Fig. 4-4, 4-5, 4-6 on page 14)

Note: 1. Selector FM AUTO
 2. Output level of genescope After attenuator
 3. Sweepwidth 1.5~2cm/150kHz
 4. Frequency band 9.5~11.5MHz

5. Connection Connect the output of genescope to TP. 1 through 100pF ceramic capacitor.
 6. FM MUTING switch OFF.



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
		FROM	TO				
1.	IF Coil Band Width Switchwide	Output 90dB Genescope	TP Pin of FM Pack	Terminal 05 of F-2524 Use Detector probe		Unnecessary	Confirm this IF wave 
	Band width Switch ...Narrow	Output 90dB Genescope	Same as above	Same as above		Same as above	Same as above 
2.	Meter Coil	Output 70dB Genescope	Same as above	Terminal ① of F-2559 (In this case, make short between terminal 01 of F-2559 and chassis	T03 T04 F-2525	Max. Output	
3.	Discriminator Coil	Output 70dB Genescope	Same as above	Terminal 01 of F-2526	T02 F-2525	Max. linearity of S Curve	
4.	90MHz Dial Calibration	90MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	ANT Terminal 300Ω	REC OUT L or R-CH VTVM & Scope	L05 FM Pack	Max. Output	
	106MHz Dial Calibration	106MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	TC05 FM Pack	Same as above	
5.	90MHz RF Adj.	90MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	L01, L02 L03, L04 FM Pack	Same as above	
	106MHz RF Adj.	106MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	Same as above	Same as above	TC01, TC02 TC03, TC04 FM Pack	Same as above	
6.	Signal Meter Adj.	98MHz ANT Input 60dB 400Hz (100% MOD) FM SSG	Same as above	Signal Meter	VR03 F-2525	4.3 on meter	
7.	Gain Adj.	98MHz ANT Input 40dB FM SSG Pilot 19kHz (10% MOD) L-CH (0% MOD) R-CH 1kHz (45% MOD) STEREO SG	Same as above	VTVM & Scope	VR02 F-2525	Separation (Noise Canceller SW → ON)	Proceed step 6 again to confirm the meter Pointer level, 4.3 If not, repeat from step 6.

Note: 1) Any IF adjustment is unnecessary. Confirm correct IF waveform only.

2) As two trimmers on F-2524 are pre-adjusted in factory, this adjustment is unnecessary.

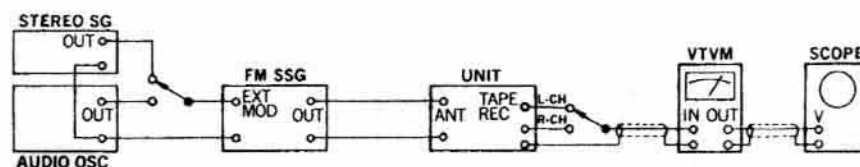
3) When measuring FM distortion, the following measuring instruments are required.

FM SSG having distortion less than 0.05%

FM Stereo having distortion less than 0.015%

4-3. MPX Alignment (See Fig. 4-5 on page 6)

Note: 1. Selector.....FM Auto
2. FM Muting switchOFF



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
		FROM	TO				
1.	PLL VCO Adj.	98MHz ANT Input 60dB FM SSG Pilot 19kHz (10% MOD) L-CH 1kHz (45% MOD) R-CH (0% MOD) STEREO SG	ANT Terminal 300Ω	Stereo Indicator	VR603 F-2526	Light Indicator	Adjust the VR603 within center of lighting level
	PLL VCO Adj. In case of using Freq. Counter		Make short between MPX input terminal 01 of F-2556 and chassis	TP pin F-2526 Use Freq. Counter	VR603 F-2526	19kHz ±30Hz	
2.	Separation	98MHz ANT Input 60dB FM SSG Pilot 19kHz (10% MOD) L-CH (0% MOD) R-CH 1kHz (45% MOD) STEREO SG	ANT Terminal 300Ω	VTVM & Scope	VR601 F-2526	Min. Output -45dB	
3.	Separation	98MHz ANT Input 60dB FM SSG Pilot 19kHz (10% MOD) R-CH (0% MOD) L-CH 1kHz (45% MOD) STEREO SG	Same as above	REC OUT R-CH VTVM & Scope	VR602 F-2526	Min. Output -45dB	Confirm step 2. If less than -45dB repeat step 2, 3
4.	Muting level & Indicator level	98MHz ANT Input 12dB FM SSG Pilot 19kHz (10% MOD) L-CH (0% MOD) R-CH (45% MOD)	Same as above	Stereo Indicator	VR604 F-2526	Muting level 12dB Indicator lighting level 12dB	

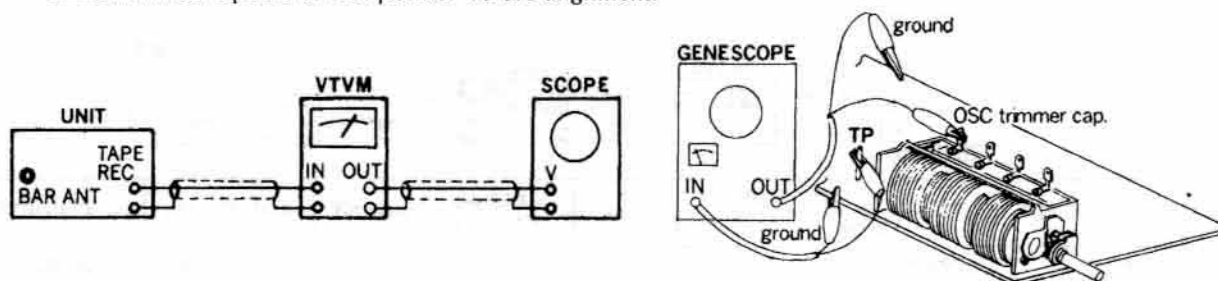
4-4. Calibration level Adjustment (See Fig. 4-6 on page 14)

Note: Two pre-settings and connecting diagram of measuring instruments is same as above 4-3. MPX Alignment.

STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
		FROM	TO				
1.	Calibration level Adj.	98MHz ANT Input 60dB (MONO 100%)	ANT Terminal 300Ω	REC OUT R or L-CH VTVM & Scope		Set Indication level of VTVM to 0dB	Calibration Switch.....Out
				Same as above	VR605 F-2526	Set the Indica- tion level to -9.5dB from the above 0dB	Calibration Switch.....In

4-5. AM IF Adjustment and Tracking (See Fig. 4-7 on page 14)

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



STEP	SUBJECT	FEED SIGNAL		MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
		FROM	TO				
1.	IF Coil	Genescope Output 55dB	L702 F-2539	TP01 F-2539	T02, T03 F-2539	Max. Output	
		Genescope Output 55dB	L702 F-2539	TP01 F-2539	CF01 F-2539	Same as above	
2.	600kHz Dial Calibration	600kHz ANT Input 60dB 400Hz (MOD 30%) AM SSG	AM ANT Terminal	REC OUT L or R-CH VTVM & Scope	T04 F-2539	Same as above	
	1400kHz Dial Calibration	1400kHz ANT Input 50dB 400Hz (MOD 30%) AM SSG	Same as above	Same as above	TC03 F-2539	Same as above	
3.	600kHz RF Adj.	600kHz ANT Input 40dB 400Hz (MOD 30%) AM SSG	Same as above	Same as above	Bar ANT L701 T01 F-2539	Same as above	
	1400kHz RF Adj.	1400kHz ANT Input 50dB 400Hz (MOD 30%) AM SSG	Same as above	Same as above	TC01 TC02 F-2539	Same as above	
4.	Signal Meter	1000kHz ANT Input 100dB	Same as above	Signal Meter	VR01 F-2539	4. 1 on Meter	

**F-2559 FM MPX Noise AMP.
Circuit Board**

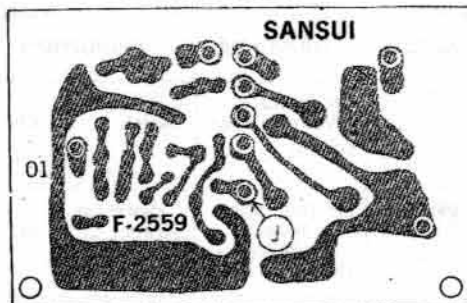


Fig. 4-2

F-2524 FM IF Circuit Board

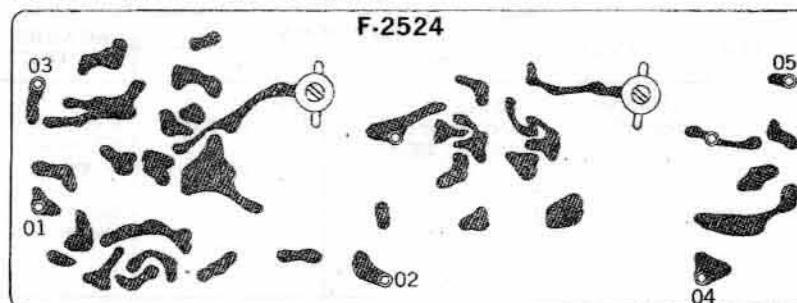


Fig. 4-3

FM Pack (Bottom Side)

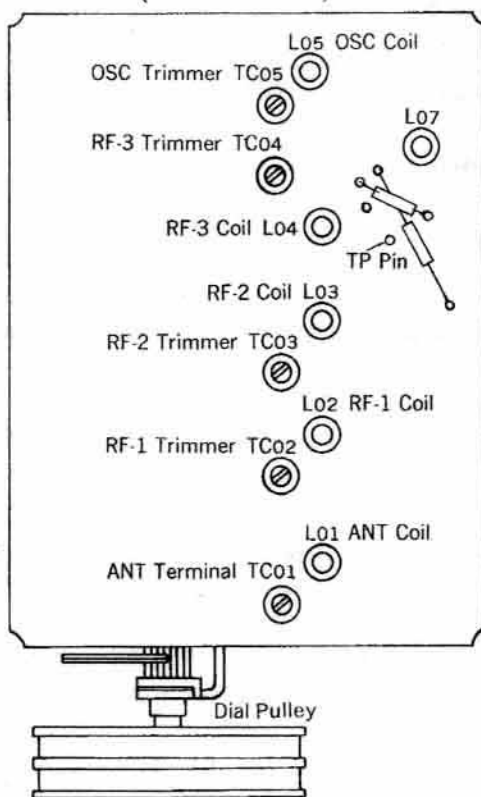


Fig. 4-4

F-2526 MPX Circuit Board

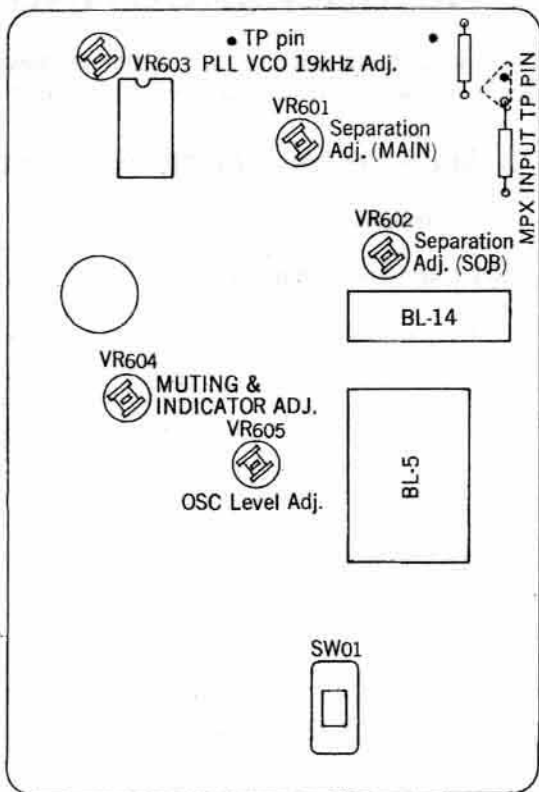
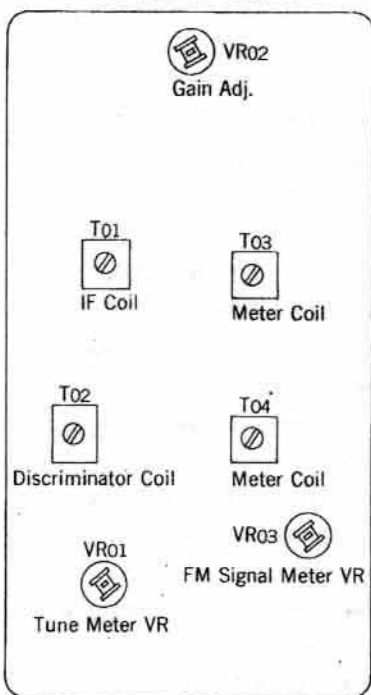


Fig. 4-5

F-2525 FM Discriminator Circuit Board



F-2539 AM IF Circuit Board

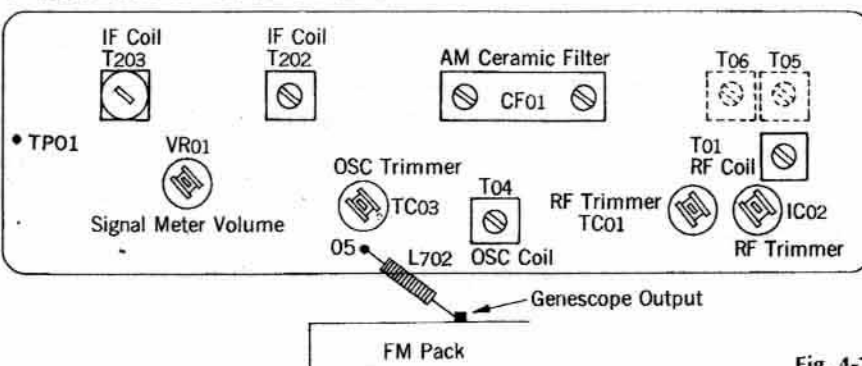


Fig. 4-7

Fig. 4-6

5. TROUBLESHOOTING CHART

*The functional operation of each section is shown in the block diagram on page 16.

Please utilize the diagram together with "Main Troubleshooting on Each Section" in this manual, if necessary.

5-1. Main Troubleshooting on Each Section

Symptom	Cause
1. FM and AM inoperative	
1-1. No any voltage supplied to each section	1. Defective power switch, S9 and voltage selector 2. Power Fuse, F901 opens 3. Power Fuse, F01, F02 on F-2527 open 4. Defective each transistor on F-2527 5. Unproper setting of regulated voltage
1-2. Relay inoperative on MPX output section	6. Defective relay, RL601 7. Defective Power Switch, S9b. (No voltage supplied to relay) 8. Defective calibration switch, S6 9. Muting circuit inoperative
1-3. Defective IC01, IC02 on MPX circuit board	
2. Troubles on FM section	
2-1. FM Inoperative	
1) Signal meter inoperative (Meter circuit operative)	1. Defective FM pack PAF-5331P 2. FM Pack, PAF-5331P out of adjustment 3. Defective TR01~TR03 on F-2524 4. Defective CF01, BF01, BF02 on F-2524 5. Defective IC01, IC02 on F-2524 6. Defective band width switch, S3
2) Signal meter operative (No output signal at DETECTOR OUTPUT)	7. Defective IC01, IC02 on F-2525 8. Defective TR01, TR02 on F-2525 9. T201, T202 out of adjustment or open 10. Defective TR01 on F-2526
2-2. Troubles on Meter Section	
1) Signal meter inoperative	11. Defective TR03, TR04 on F-2525 12. Defective D02~D04 on F-2525 13. Meter volume, VR03 out of adjustment 14. Defective Signal Meter 15. Defective meter selector switch, S8
2) No input signal to muting, indicator circuit	16. T203, T204 open on F-2525 17. Defective TR05 on F-2525
3) Multi-path meter inoperative (When meter selector switch is pushed) ON (MULTI-PATH)	18. Defective TR06 on F-2525 19. Defective D10, D11 on F-2525 20. Defective meter selector switch, S8
2-3. Troubles on AGC Circuit Section	21. Defective TR04, TR05 on F-2524 22. Defective D06, D07 on F-2524

Symptom

Cause

3. Troubles on MPX Section

3-1. No channel separation on FM stereo broadcasting

- 1) Stereo indicator lamp not lighted
 - 1. Defective TR608, TR609 on F-2526
 - 2. VR603 (76kHz adjustment volume) out of adjustment
 - 3. Defective IC601 on PLL
 - 4. TR601 shorted on F-2525
 - 5. Defective stereo indicator LED04
 - 2) Stereo indicator lamp lighted
 - 6. TR603, TR604 open on F-2526
 - 7. T601 open on F-2526
 - 8. Defective D601~D604 on F-2526
- #### 3-2. MPX inoperative at FM MONO position
- 9. Defective TR601, TR602 on F-2526
 - 10. Defective TR605~TR607 on F-2526
 - 11. Imperfect contact of low pass filter switch
 - 12. Imperfect contact of selector switch, S01c, S01b

3-3. Troubles on Muting, indicator circuit

- 1) Muting inoperative
 - 13. Meter circuit inoperative
 - 14. Noise AMP. circuit board, F-2559 inoperative
 - 15. VR604 out of adjustment on F-2526
 - 16. Defective TR610~TR612 on F-2526

4. Troubles on FM Noise Canceller Circuit

- 1. Meter AMP. circuit inoperative
- 2. Defective TR613 on F-2526
- 3. Defective photo-cell lamp, PC601

5. Troubles on Calibration Level Circuit

- 1. Defective TR614, TR615 on F-2526
- 2. VR605 out of adjustment
- 3. Imperfect contact of calibration switch, S6

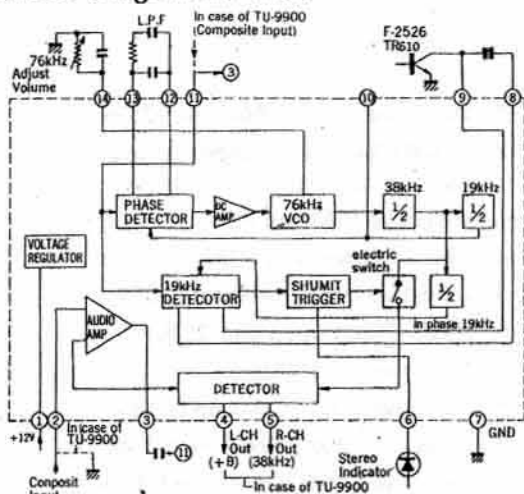
6. Troubles on AM Section

6-1. AM inoperative or weak sensitivity

- 1. IF out of adjustment
- 2. RF or tracking out of adjustment
- 3. Each coil open
- 4. Defective transistor on F-2539

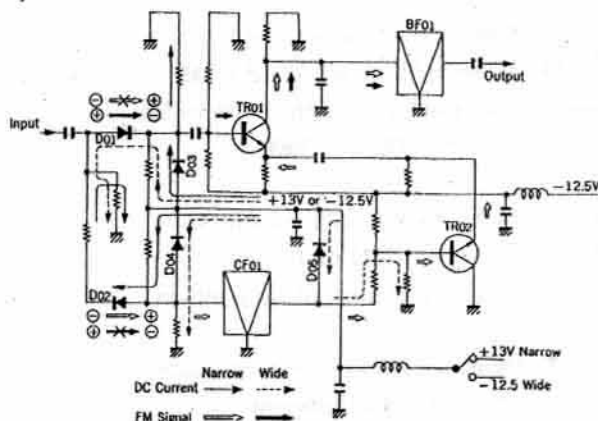
5-2. Operation Block Diagram

1) Block Diagram of PLL



IC "HA155W" using TU-9900 originally contains detector and L and R-channel of audio signals are supplied to output of PLL as above diagram. Actually, operation of PLL IC of TU-9900 produces 38kHz (sub-carrier) and detector is in separated other circuit in order to ensure better stereo separation.

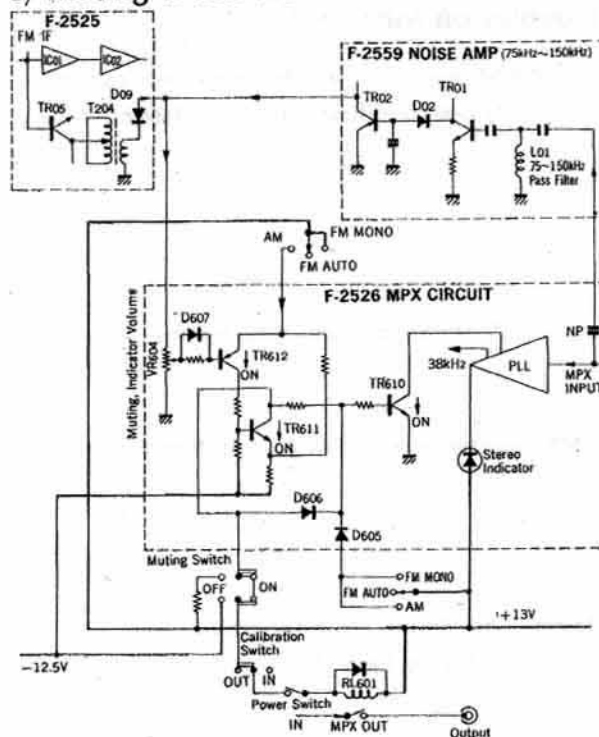
2) FM IF Band With Circuit



*Operation of Band Width Circuit

- 1) Band width switch..... wide
 - ① - 12.5V is supplied to diode switch circuit.
 - ② D01 in signal circuit is ON and D02 is OFF.
 - ③ When D01 is ON, TR01 is ON.
- 2) Band width switch..... Narrow
 - ① + 13V is supplied to diode switch circuit.
 - ② D01 in signal circuit is OFF and D02 is ON.
 - ③ Signal flows into narrow band filter (CF01), then TR02 is ON.
 - ④ As TR02, TR01 are used for differential amplifier, output signal is obtained from collector of TR01 by switching the TR02 ON.

3) Muting & Indicator Circuit



Operation of Muting Circuit

- 1) Muting switch.....ON
- When input level to TR612 is less than 12dB,
①TR612. OFF ②TR611. OFF ③Relay. OFF (on MPX output section) ④Output signal from output terminal is not obtained.
 - When input level to TR612 is more than 12dB,
①TR612. ON ②TR611. ON ③Relay. ON (on MPX output section) ④Output signal from output terminal is obtained.
- 2) Muting switch.....OFF or AM position
- Relay. ON (on MPX output section)

Operation of Stereo Indicator Circuit

- 1) Selector.....FM AUTO
 •When input level to TR612 is less than 12dB,
 ①TR612. OFF ②TR611. ON ③TR610. ON ④Indicator dose not light up.
 •When input level to TR612 is move than 12dB,
 ①TR612. ON ②TR611. ON ③TR610. OFF ④Indicator lights up.
- 2) Selector.....FM MONO or AM position.
 ①TR610. ON ②Indicator does not light up.

Operation of Anti-misoperating Circuit

- ① Noises from 75kHz to 150kHz included in MPX composite signal are amplified by TR01.
- ② By switching TR01 ON, TR02 becomes ON.
- ③ When TR02 becomes ON, V_{c1} (V1) of TR02 nearly becomes 0 volt. If signal through TR05 produces negative potential voltage (V2) by diode, D09. The input levels (V1+V2) to TR612 are controlled by the noise level.
- ④ When input level to TR612 is less than 12dB indicator does not light up.

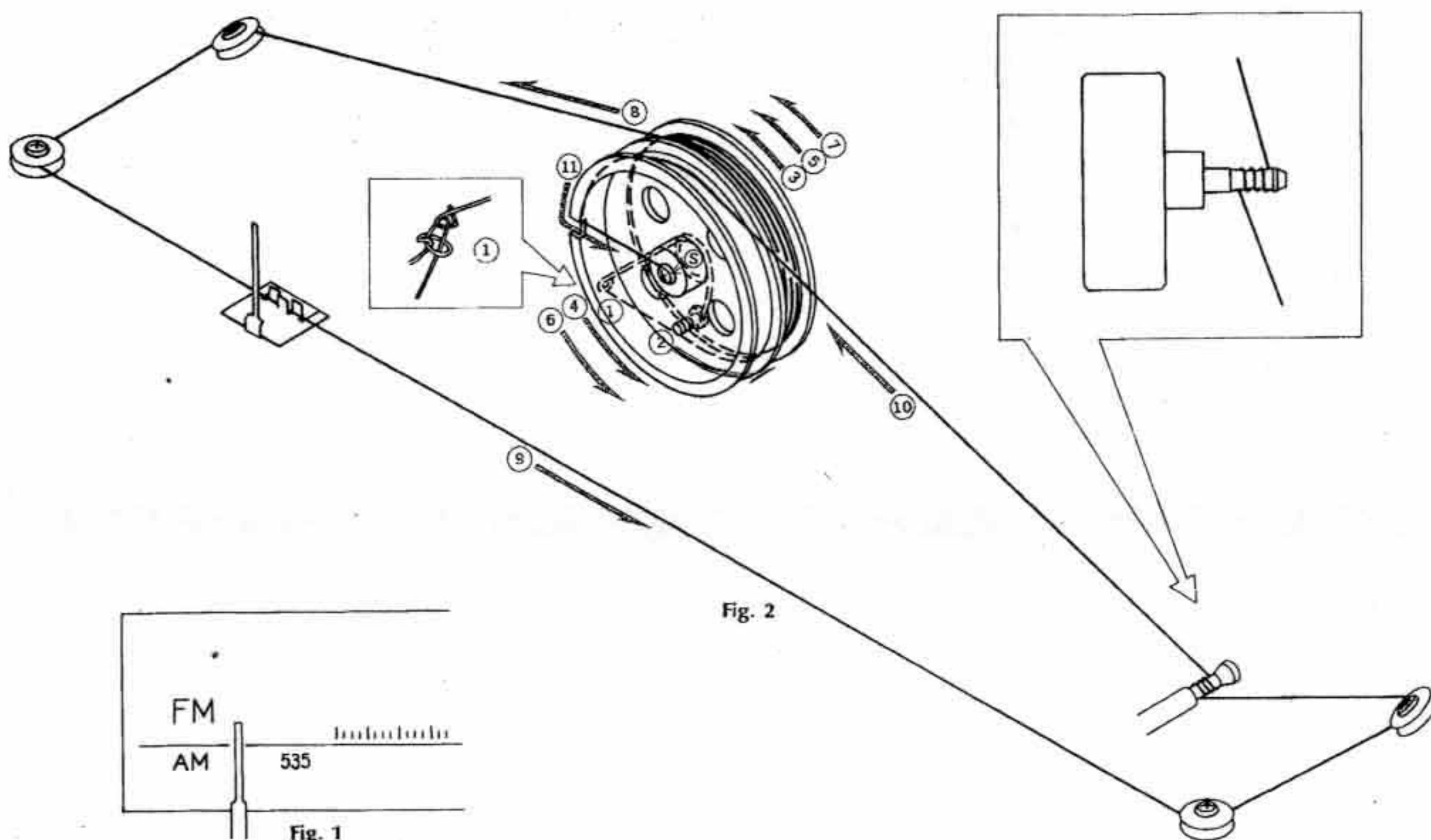
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7. THREADING OF DIAL CORD

*If a dial cord is cut off or slips, replace it by following procedures.

This unit uses 0.6mm ϕ cord, please replace it with the same type certainly.

*The length of dial cord is approximately 160cm (63 inch).



7-1. Threading of Dial Cord

Threading of Dial Cord

Thread the dial cord in numerical order from ① to ⑪ as Fig. 2.

- 1) Open the variable capacitor completely (Min. capacitance).
- 2) Tie dial cord to the dial spring as Fig. 2.
- 3) Thread cord in the direction of arrow from ① to ⑪
- 4) After ⑪, tie the cord to the screw ⑤ of the dial pulley as Fig. 2.

7-2. Attachment of Dial Pointer

Attachment of Dial Pointer

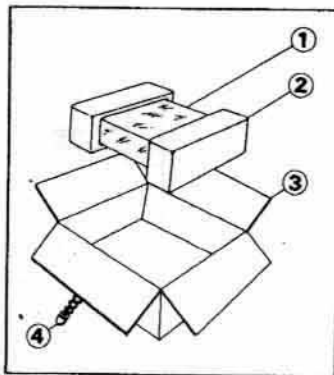
- 1) Close the variable capacitor completely.
- 2) Set the dial pointer to the position on dial scale as shown in Fig. 1.

*Confirm that the dial pointer runs smoothly on the dial scale by turning the tuning shaft.

Stock No.	Description
6036051	Dial Cord (0.6mm ϕ)
6146680	D-52 Type Pulley
(5109122	M3 $\times$ 8 Screw)
6906490	Dial Spring

8. PACKING LIST

Parts No.	Stock No.	Description
1	9116670	Vinyl Cover
2	9027920	Styrofoam Packing
3	9009370	Carton Case
4	5996080	Curl Stopper



9. ACCESSORY PARTS LIST

Stock No.	Description
9209190	Operating Instructions
3820090, 1	FM Antenna
3810180, 1	Pinplug Cord
2440030	Coaxial Male Connector F-B-R
9237000	Schematic Diagram



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