SERVICE MANUAL

IN-DASH CASSETTE CAR STEREO WITH AM/FM/MPX RADIO RECEIVER

(12 VOLT D.C. NEGATIVE EARTH)

MODEL CM-510

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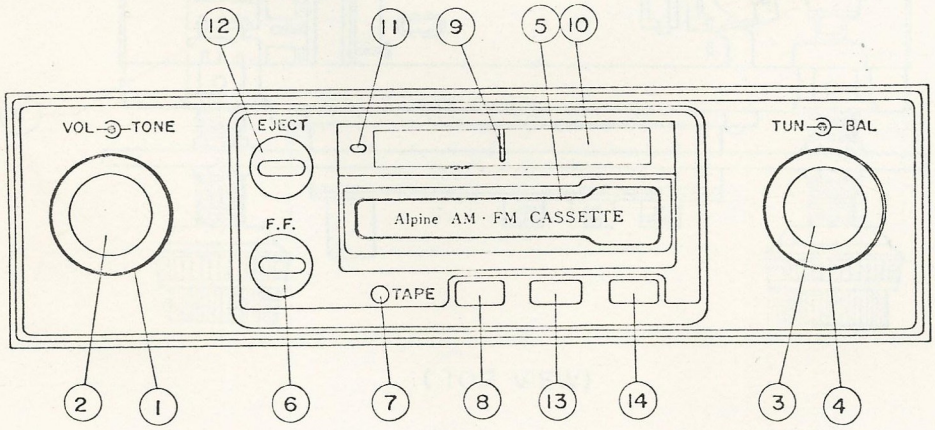
Alpine

1. SPECIFICATIONS

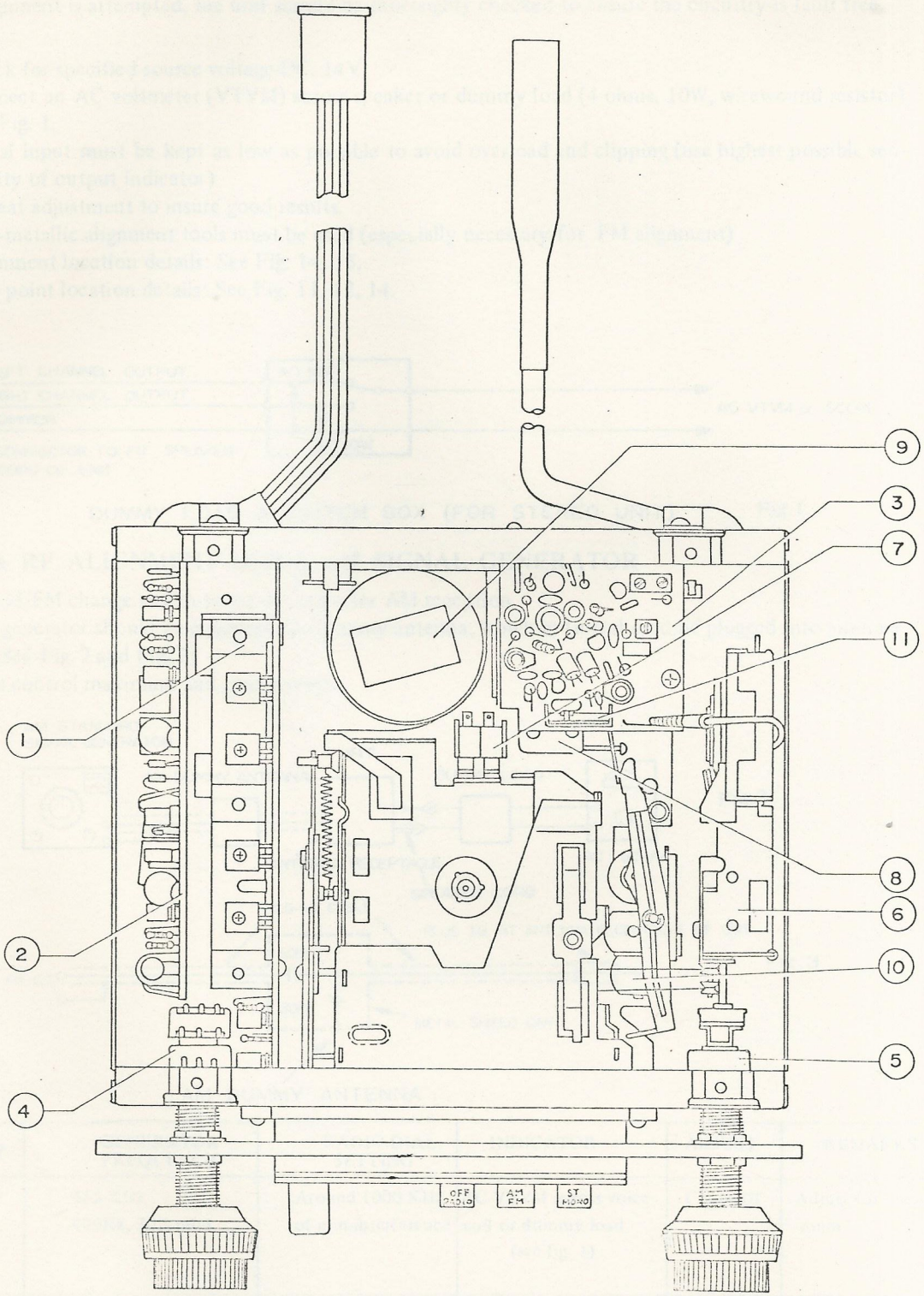
1.	**Tape Player:**	
	Playback system:	4-track, 2-channel stereo
	Tape speed:	1 7/8 inches per second (4.75 cm/sec.)
	Wow & Flutter:	0.35% WRMS
	Freq. response:	128 – 8,000 Hz
2.	**AM Receiver:**	
	Tuning range:	535 – 1,605 KHz
	Sensitivity:	28 dB/25μV
	Image rejection:	50 dB
	IF frequency:	455 KHz
3.	**FM Receiver:**	
	Tuning range:	87.5 – 108 MHz
	IF frequency:	10.7 MHz
	Sensitivity:	15.5 dB/6.0μV
	Image rejection:	40 dB (at 98 MHz)
	MPX separation:	17 dB (at 1 KHz)
	MPX indicator sensitivity:	26 dB/20μV
4.	**General & Audio amp:**	
	Semi-conductors:	22 TRANSISTORS 9 DIODES 3 INTEGRATED CIRCUITS 1 FET
	Power requirement:	11–16 V D.C. NEGATIVE EARTH
	Fuse requirement:	5 AMPERE
	Load impedance:	4 Ohms
	Output power:	4 watts RMS per channel into 4 Ohms impedance
	Frequency response:	125 – 8,000 Hz
	Dimensions:	Width 176mm (6.9") x Depth 148mm (5.8") x Height 48mm (1.9")

2. FRONT VIEW



(1) TONE CONTROL
(2) VOLUME CONTROL
(3) TUNING KNOB
(4) BALANCE CONTROL
(5) TAPE SLOT
(6) F.F. BUTTON
(7) TAPE INDICATOR LAMP
(8) RADIO ON-OFF SWITCH
(9) DIAL POINTER
(10) DIAL SCALE PLATE
(11) STEREO INDICATOR LAMP
(12) EJECT BUTTON
(13) FM-AM CHANGE SWITCH
(14) MONO-STEREO CHANGE SWITCH

3. PARTS DESCRIPTION



(TOP VIEW)

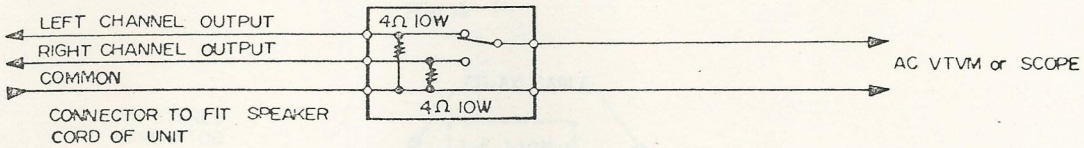
1. MAIN AMP PANEL ASSEMBLY
2. FM/ IF/ MPX PANEL ASSEMBLY
3. AM PANEL ASSEMBLY
4. VOLUME ASSEMBLY
5. TUNING SHAFT & VOLUME
6. TUNER ASSEMBLY
7. MICRO SWITCH (VER)
8. MICRO SWITCH (HOR)
9. D.C. MOTOR
10. PLAYBACK STEREO HEAD
11. TRIMMER

4. AM/FM/MPX ALIGNMENT PROCEDURE

Before alignment is attempted, the unit should be thoroughly checked to ensure the circuitry is fault free.

NOTES:

1. Check for specified source voltage-DC. 14V.
2. Connect an AC voltmeter (VTVM) across speaker or dummy load (4 ohms, 10W, wirewound resistor) See Fig. 1.
3. Signal input must be kept as low as possible to avoid overload and clipping (use highest possible sensitivity of output indicator)
4. Repeat adjustment to insure good results.
5. Non-metallic alignment tools must be used (especially necessary for FM alignment)
6. Alignment location details: See Fig. 14, 15.
7. Test point location details: See Fig. 11, 12, 14.



DUMMY LOAD & SWITCH BOX (FOR STEREO UNIT) Fig. I

AM IF & RF ALIGNMENT USING AM SIGNAL GENERATOR

Press the AM/FM change switch to set the radio for AM reception.

AM signal generator should be connected to dummy antenna, which in turn should be plugged into antenna terminal. (See Fig. 2 and Fig. 3)

Set volume control maximum and tone to high.

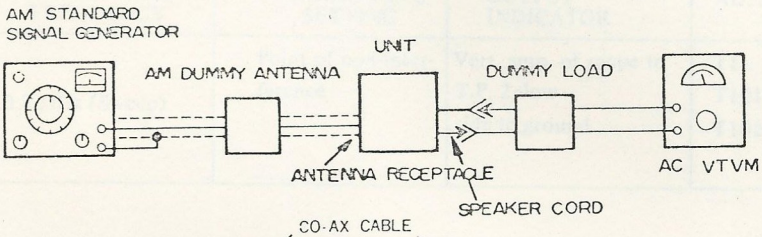


Fig.2

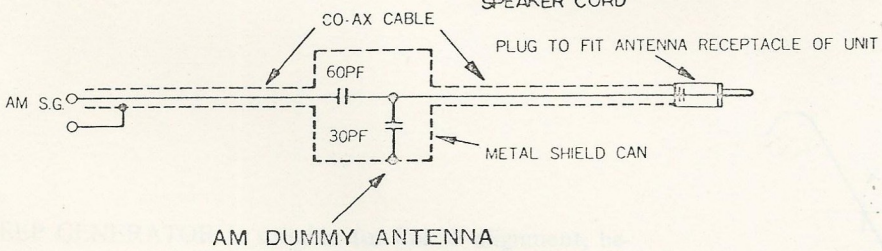


Fig. 3

STEP	GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	455 KHz 400Hz, 30% mod.	Around 1000 KHz of non-interference	AC VTVM across voice coil or dummy load (see fig. 1)	CI-M-201	Adjust for maximum
2	1650 KHz 400Hz, 30% mod.	High frequency end stop	"	TC 203	"
3	525 KHz 400Hz, 30% mod.	Tune to signal	"	T201	"
4	1400 KHz 400Hz, 30% mod.	Tune to signal	"	TC201 TC202	"
5	Repeat step 2.3 and 4 until no further increase. Step 4 should be last step.				

With antenna extended to desired height (maximum is recommended), tune into a station between 1200KHz and 1400KHz where only a weak signal is received. Adjust antenna trimmer (TC201) until maximum output is received.

FM IF ALIGNMENT USING FM SWEEP GENERATOR

Depress the AM/FM change switch to set the radio for FM reception. High side of sweep generator through 0.01 mfd. capacitor to T.P 1, low side to ground. (Fig. 4, 5)
Set volume control to minimum and tone to high.

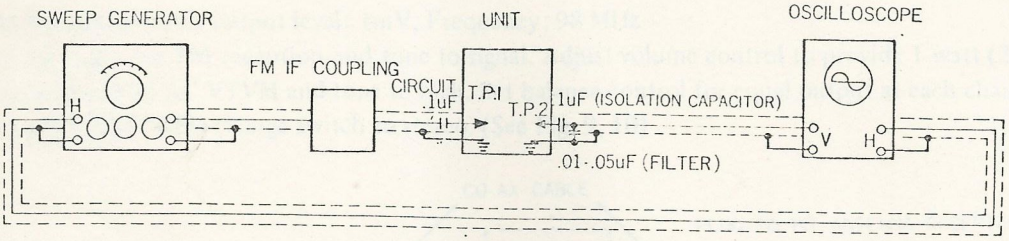
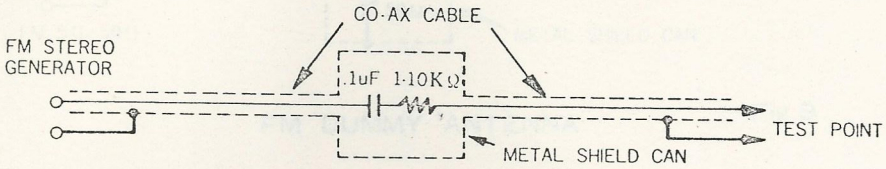


Fig.4



FM IF COUPLING CIRCUIT Fig.5

STEP	GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT INDICATOR	ADJUST	REMARKS
1	10.7 MHz (Sweep)	Point of non-interference	Vert, amp. of scope to T.P. 2, low side to ground	T1 T101 T102	Adjust T101, T102 & T1 to obtain symmetry of response similar to Fig. 6

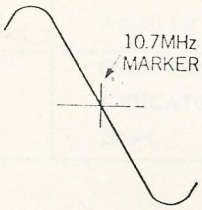


Fig 6
(RED)

NOTE:

1. FM SWEEP GENERATOR is suitable for FM IF alignment, because Ceramic Filters are used in the IF circuit.
   Five kinds of Ceramic Filters are used and they are different in their center frequencies as shown below.
   RED: 10.7 MHz, BLUE: 10.67 MHz
   ORANGE: 10.73 MHz BLACK: 10.64 MHz
   WHITE: 10.76 MHz
2. If the Ceramic Filters EXCEPT RED are used, 10.7 MHz maker will not appear at the center of "S" curve. (See Fig. 7, 8)
3. The colour of Ceramic Filters will vary from unit to unit, manufactured in different production runs, but dotted Filters of the same colour should be used when replacement is made.
4. Take care that contact is not made with the static coupling between output lead of sweep generator and input lead of scope. The leads should be kept as short as possible and carefully shielded.

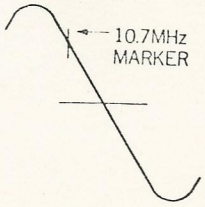


Fig 7
(WHITE, ORANGE)

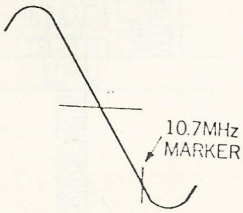


Fig 8
(BLACK or BLUE)

MULTIPLEX ALIGNMENT USING FM SIGNAL GENERATOR MODULATED BY FM STEREO SIGNAL GENERATOR

FM signal gnerator should be modulated by FM STEREO signal generator at modulation level:

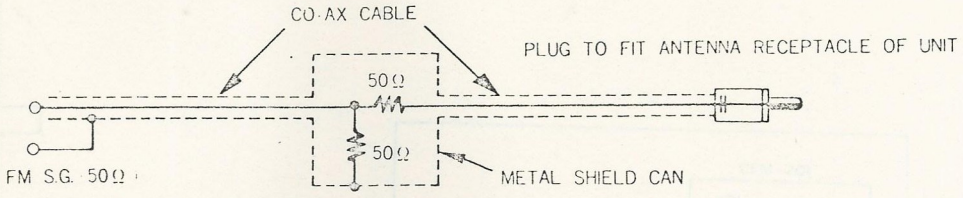
19 KHz ..... 10 % (7.5 KHz dev)

1000 Hz ..... 30 % (75 KHz dev)

FM Signal Generator output level: 1mV, Frequency; 98 MHz

Set the radio for FM reception and tune to signal. Adjust volume control to provide 1 watt (2 volts across 4 ohms load) on AC VTVM and tone to high. Set balance control for equal output at each channel.

Set MONO/STEREO change switch to stereo. (See Fig. 9, 10)



FM DUMMY ANTENNA

Fig.9

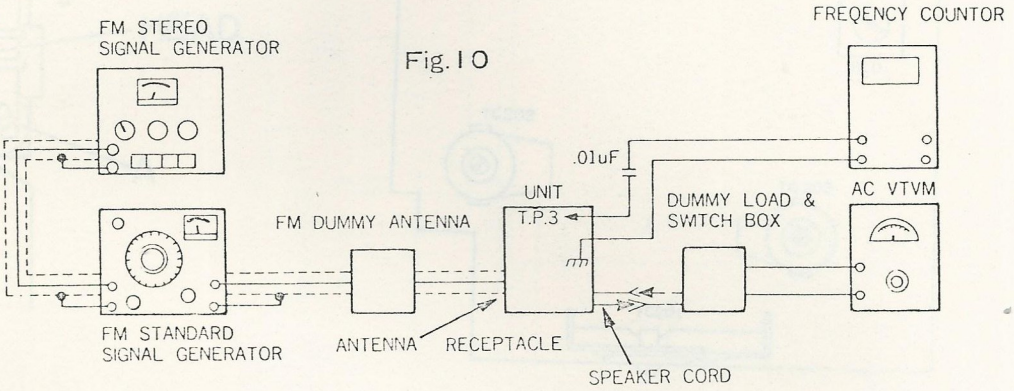


Fig. 10

STEP	MODULATION FREQUENCY	OUTPUT INDICATOR	ADJUST	REMARKS
1	No signal	Frequency counter to T.P.3.	VR101	Adjust for 19 KHz.
2.	19 KHz (pilot signal)			Check that STEREO INDICATOR LAMP glows.

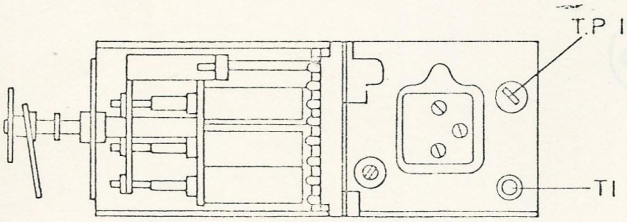


FIG 11

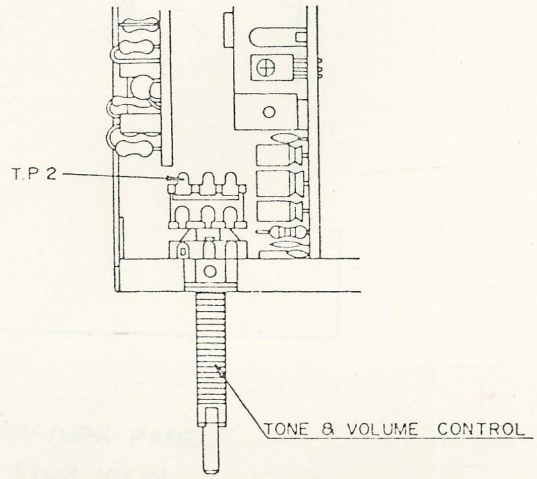


FIG 12

HEAD AZIMUTH ALIGNMENT

TEST TAPE	OUTPUT	ADJUST	REMARKS
AZIMUTH TEST TAPE (6.3 KHz)	AC VTVM across 4 ohms load	A (See Fig. 13)	MAX

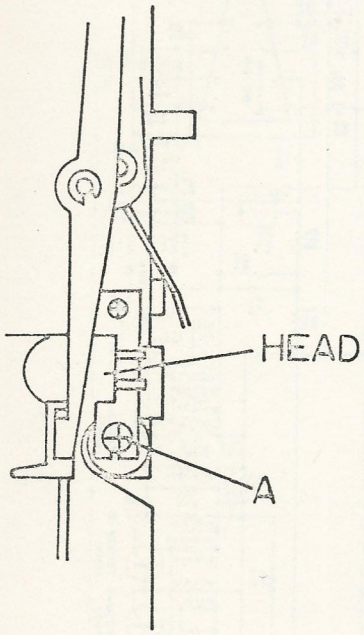
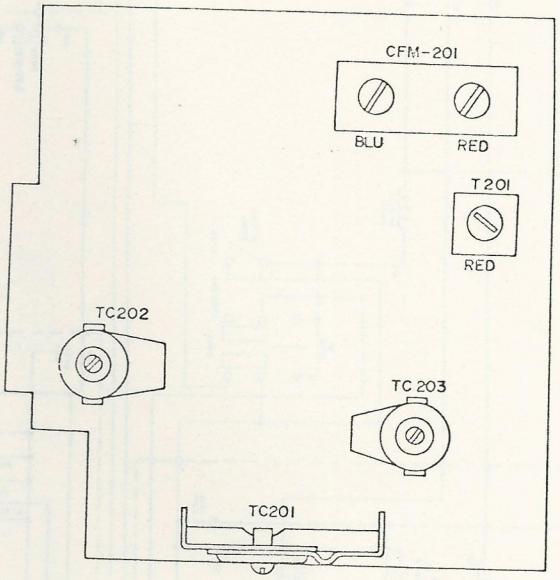


FIG 13

The head alignment should be effected by adjusting the screw in position A until maximum output is obtained.



AM PANEL
(TOP VIEW)

Fig. 15

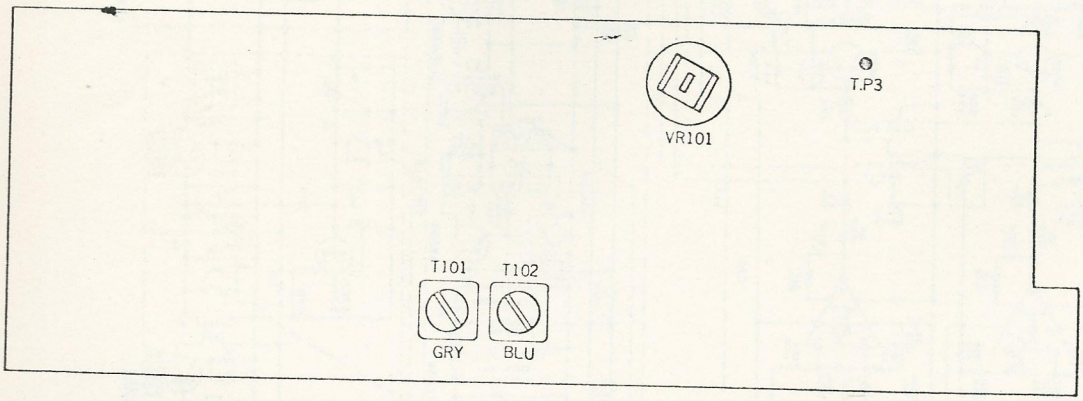
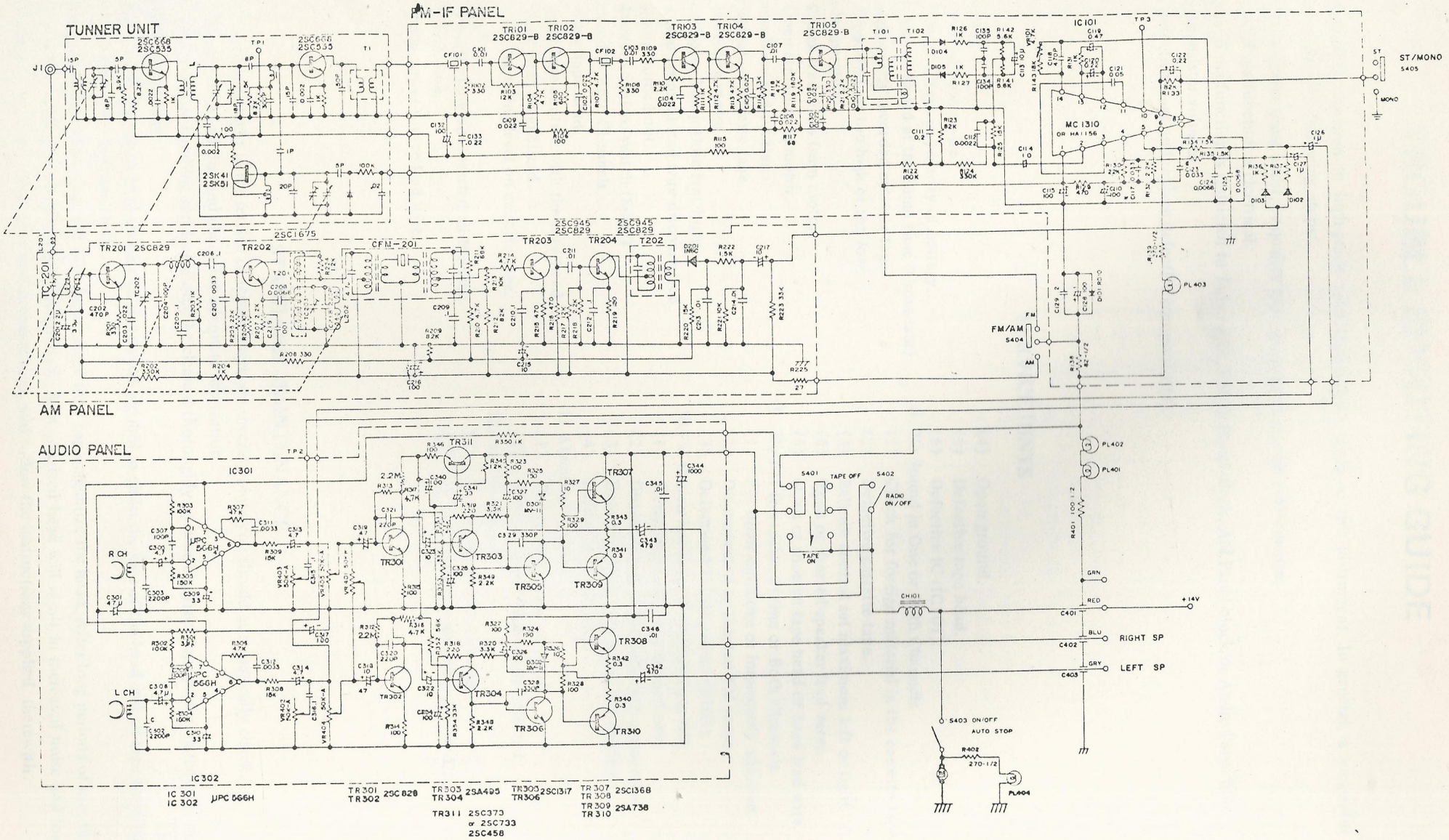


Fig. 14

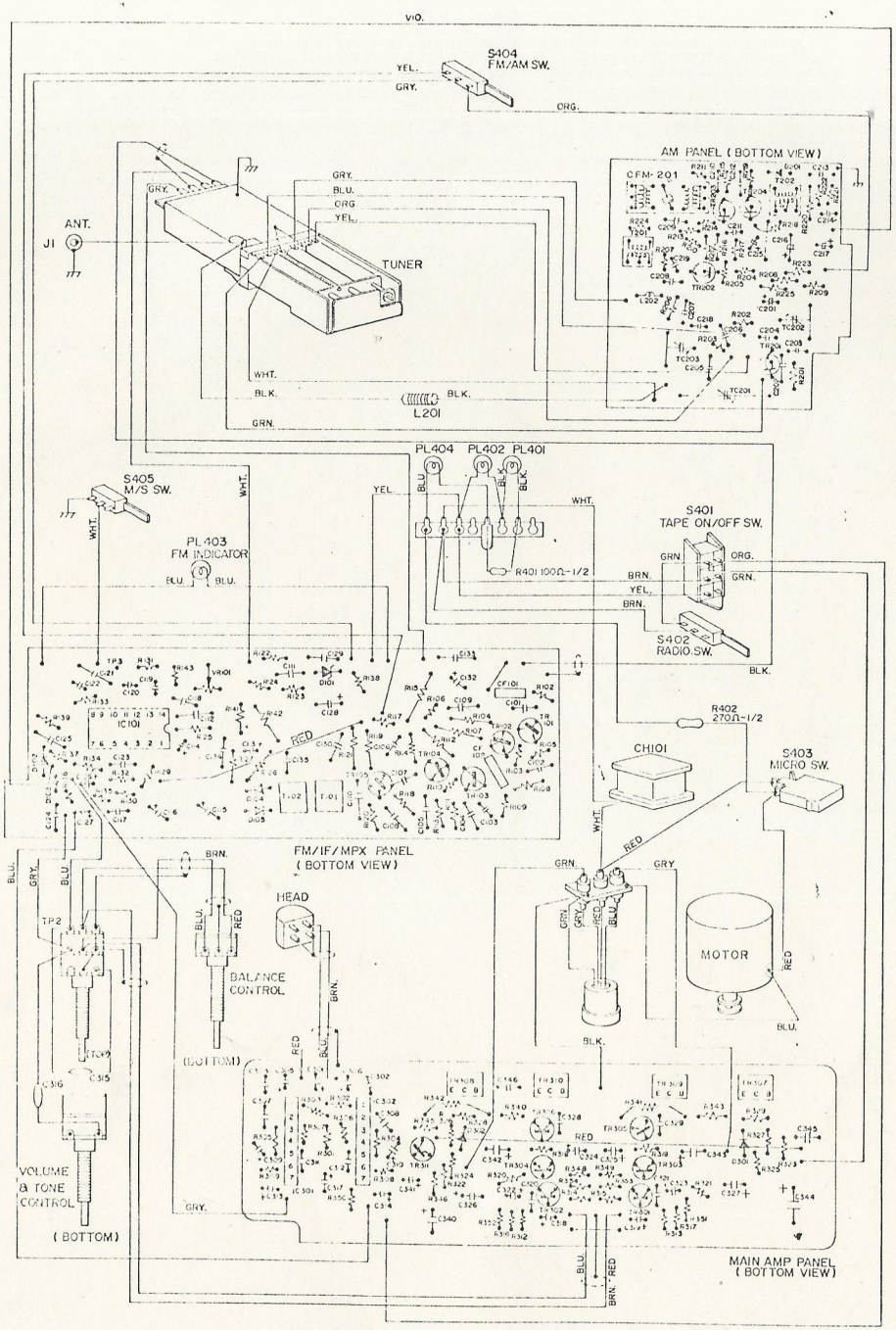
FM/IF/MPX PANEL
(TOP VIEW)

CIRCUIT DIAGRAM

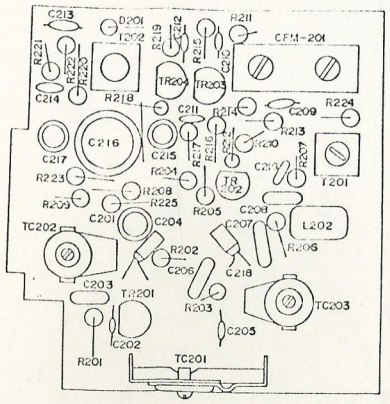


NB PLEASE NOTE THAT THIS DIAGRAM IS FOR GUIDELINE PURPOSES ONLY AND INDIVIDUAL UNIT VARIATIONS MAY OCCUR

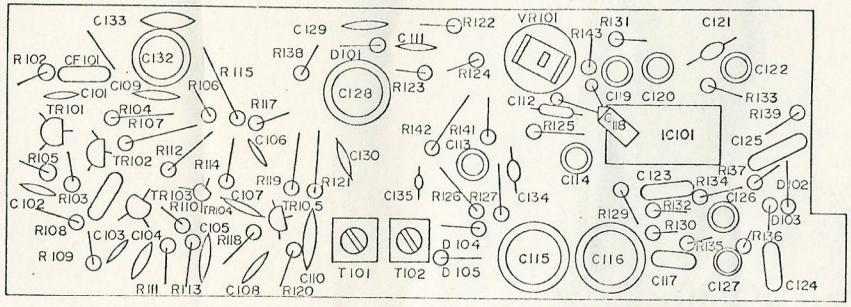
WIRING CONNECTIONS



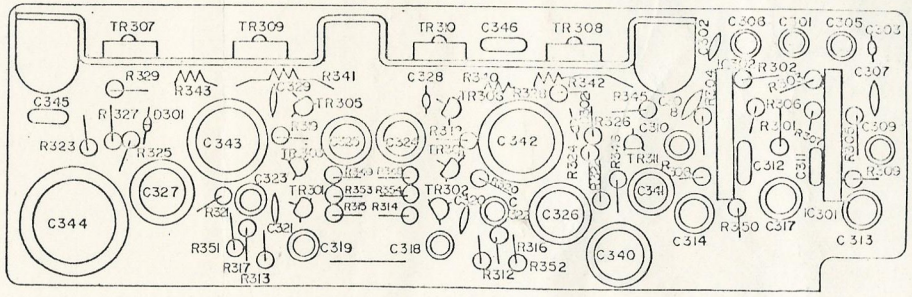
WIRING CONNECTIONS FIG-D



AM PANEL
(TOP VIEW)

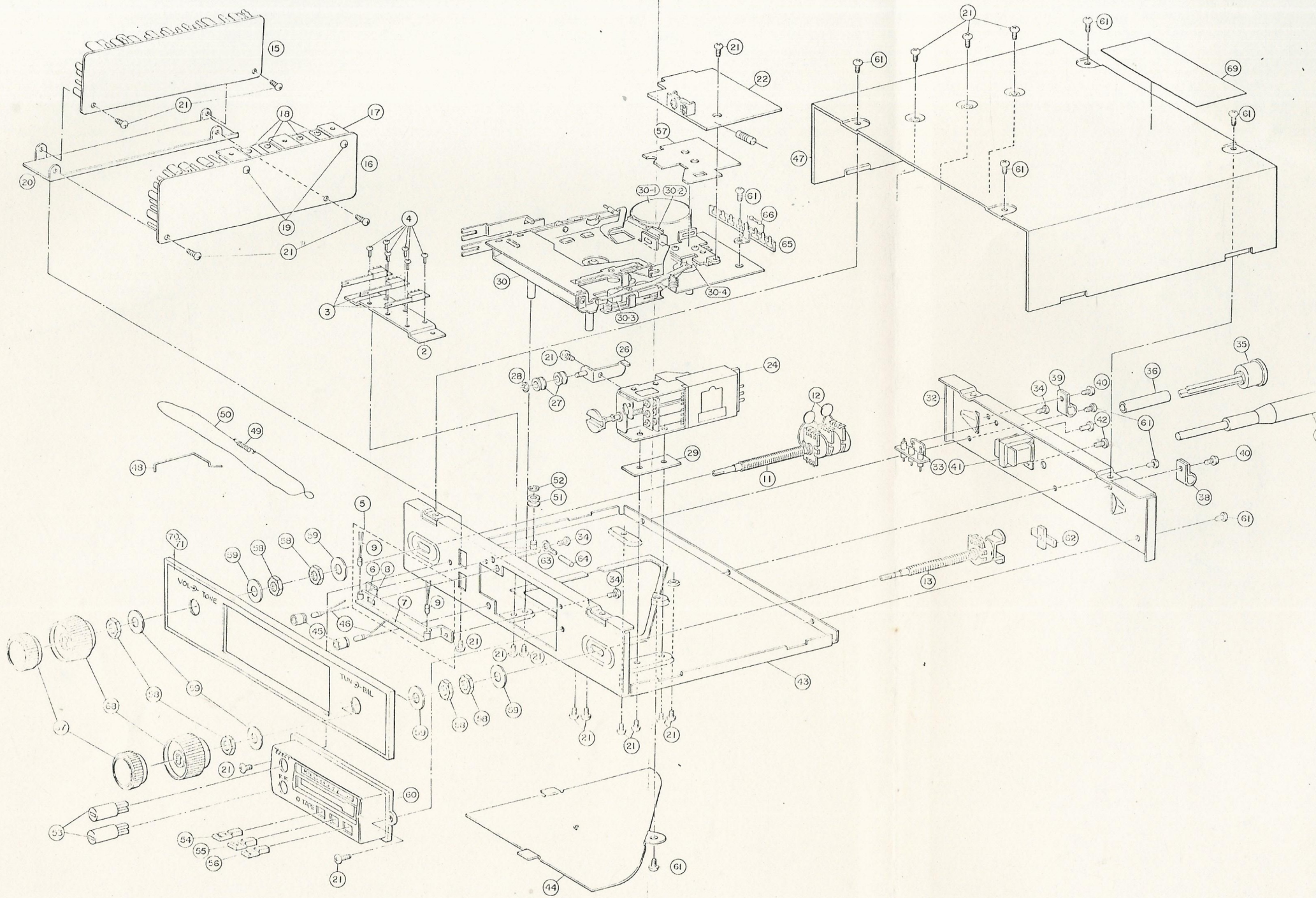


FM/IF/MPX PANEL
(TOP VIEW)



MAIN AMP PANEL
(TOP VIEW)

EXPLODED VIEW SHOWING MECHANICAL ASSEMBLY



TROUBLE SHOOTING GUIDE

Service procedures common to high-grade solid state device apply to this instrument. In general, a successful approach includes the following steps:

1. Operate instrument using a test, or quality tape, to indicate precise performance.
2. Determine if malfunction is electrical.
3. Determine if malfunction is restricted to Tuner unit, FM/IF Panel block, AM Panel block or Audio Panel block.
4. Measure transistor voltages.
5. Isolate defective stage and replace defective component(s).

SERVICE HINTS

1. Blown Fuse
   (1) Shorted power wire.
   (2) Wrong voltage or polarity of battery.
2. Two Programs Heard at the Same time (Cross talk)
   (1) Improperly recorded cassette tape.
   (2) Tape head set too high or too low.
3. Motor Inoperative
   (1) Check lead wires from motor.
   (2) Open armature in motor.
4. Excessive Wow and Flutter
   (1) Defective cassette tape.
   (2) Defective motor
5. Tape Indicator Lamp Dose Not Light
   (1) Lamp terminal lead wire disconnected.
   (2) Lamp burned out.
   (3) Defective micro switch (S403)
6. Low Sound in Both Channels
   (1) Dirty tape head.
   (2) Poor tape contact with the tape head.
   (3) Tape head magnetized.
   (4) Low recording level on cassette tape.
7. No Sound
   (1) Cassette tape not inserted all the way.
   (2) Check fuse.
   (3) Open power source lead wire.
   (4) Open ground.
   (5) Defective tape head.
   (6) Defective IC (IC101).
8. No Sound in One or Both Channels
   (1) Check for foreign material in the cassette tape.
   (2) Defective cassette tape.
   (3) Balance control set maximum left or right.
   (4) Open or shorted speaker lead wires.
   (5) Open or shorted tape head or head lead wire.
9. No FM Reception in One or Both Channels.
   (1) FM tuner defective or improperly adjusted.
   (2) Disconnected or shorted FM tuner.
   (3) Defective FM/AM switch (S404).
10. FM Stereo Indicator Does Not Turn ON.
   (1) Stereo indicator lamp burned out.
   (2) Disconnected or shorted lamp connection.
   (3) Defective Mono/Stereo switch (S405).
   (4) Defective IC (IC101).
11. Abnormal Oscillation
   (1) Tuner improperly adjusted.
   (2) IF transformer improperly adjusted.
12. Poor Sensitivity
   (1) Tuner improperly adjusted.
   (2) IF Transformer improperly adjusted.

STANDARD MAINTENANCE

Whenever a unit is brought in for service or repair, there are several points you should automatically check.
Always check for dust and dirt and check for adequate lubrication.
The tape head and tape handling surfaces should be cleaned thoroughly to insure correct tape performance and optimum frequency response.
Use a cotton swab dipped in head cleaner or denatured alcohol to clean the face of the head and all tape handling surfaces. Wipe dry with a lint-free cloth.
Do not use magnetized tools near the tape head, since they can magnetize the head. After long periods of use, the head will retain a small amount of residual magnetism. A magnetized head will result in increased noise and loss of high-frequency response. Use a tape head demagnetizer, and follow the instructions supplied therewith.

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	Q'TY
1	1V43900J05	Assy., Push Switch	1
2	7A43479J01	Bracket, Push Switch	1
3	40C41003J01	Push, Switch	3
4	3S40011G33	Screw, Mch. (M2x4)	6
5	1V43100J66	Assy., Bracket Dial Back	1
6	7A43481J02	Bracket, Dial Back	1
7	7A43482J01	Dial, Back	1
8	61A43159J03	Lens	1
9	65C45037G19	Lamp	2
10	1V41700P65	Assy., Volume	1
11	18B40278P01	Volume	1
12	21B41870J02	Cap. Cer. 0.1 μF.	2
13	18B40275P01	Tuning Shaft & Volume	1
14	1V43900J40	Assy., Bracket Panel	1
15	1V43900J39	Assy., Panel FM/IF/MPX	1
16	1V43900J28	Assy., Panel Main Amp.	1
17	26A43164G01	Bracket, Heat Sink	1
18	3S40011G18	Scr., Mch. (M3 x 0.5 x 6)	4
19	3S44642J01	Scr., Taptite (Bind)	2
20	7B43485J01	Bracket, Panel	1
21	3S40011G42	Screw, Mch. (M3x0.5x5)	20
22	1V40600P48	Assy., Panel AM	1
23	1V43900J29	Assy., Tuner	1
24	1C43132J02	Assy., AM/FM Tuner Unit	1
25	1V43100J47	Assy., Bracket Pulley	1
26	7A43701J01	Bracket Pulley (A)	1
27	49A43494J01	Pulley	2
28	4C42091G05	Washer "C"	1
29	43A43498J01	Spacer	1
30	1D41074P01	Cassette DK Mech.	1
30-1	59D42458J04	Motor DC	1
30-2	40C40349J02	Micro, SW (VER)	2
30-3	59C43354J01	Head, Playback Stereo	1
30-4	40C43353J02	Micro, SW (HOR)	1
31	1V44200J01	Assy., Chassis Rear	1
32	27C43488J01	Chassis, Rear	1
33	21B41880G03	Cap., Through	1
34	3S40011G31	Screw, Mch. (M2.6x0.45x4)	3
35	1V44200J02	Assy., Wire Socket (B)	1
36	37S43702G17-40	Tube, Vinyl	1
37	9C42905J04	Receptacle, Antenna	1
38	42B41424G01	Clamp, Cable	1
39	42B41424G03	Clamp, Cable	1
40	3S40018G02	Screw, Tapping (M3 x 8)	2
41	25C40894G03	Choke	1
42	5S40080G04	Rivet, Tubular	2
43	27C43475J01	Chassis, Base	1
44	7B43717J01	Bracket, Chassis Cover	1
45	43A43478J01	Bushing	2
46	65C45037G07	Lamp, Pilot	2
47	27C43497J01	Chassis, Cover	1
48	52A43495J02	Pointer	1
49	41A43445J01	Spring, Dial	1
50	30A43803G01-370	Dial Code	1
51	49A43494J01	Pulley	1

REF. NO.	PART NO.	DESCRIPTION	Q'TY
52	4C42091G05	Washer "C"	1
53	1A44025J02	Assy., Eject Knob & Knob Plate	2
54	36A44012J02	Knob, Push	1
55	36A44012J03	Knob, Push	1
56	36A44012J04	Knob, Push	1
57	14A44436J01	Insulator, Fiber (D)	1
58	2S40000G20	Nut	2
59	4S40070G10	Washer, Falt	2
60	1C44038J07	Assy., Nose Piece	1
61	3A44205G05	Screw, Tap Tite (M3x5)	9
62	45A44426J01	Arm, Orudamu	1
63	29A737272	Lug, Wraparound	2
64	37S40157G01-10	Cut Sleeving Fbgls	2
65	31D40381G09	Strip Term.	1
66	6D40801G39	Res., C.F. (100-1/2)	1
67	36B43316J01	Knob, Front	2
68	36C42883J01	Knob, Control	2
69	54A40619P01	Label, Caution	1
70	15B43704J02	Nose, Face	1
71	33B44013J01	Face, Plate	1
72	42B40242P01	Drive, Belt	1
73	42B40242P03	Drive, Belt	1
		ASSY., PACKING	
1	56B40230G22	Sack, Polyethylene	1
2	56C43706J01	Tray, Packing	1
3	1V42000P02	Assy., Pamphlet	1
3-1	68P40987P01	Owners Guide	1
3-2	56B40230G12	Sack, Polyethylene	1
4	1V43100J56	Assy., Kit Installation	1
4-1	8B41874J01	Cap., Generator	1
4-2	3A43315G02	Screw, Mch. (M5x0.8x10)	1
4-3	4S40072G11	Washer, Tooth Lock (M5)	2
4-4	4S40070G08	Washer, Flat (Blk. Znc.)	1
4-5	3S40012G39	Screw, Tapping (M5)	1
4-6	56B40230G09	Sack, Polyethylene	1
4-7	4S40070G10	Washer, Flat	4
4-8	2S40000G20	Nut, Hexagon (M9x0.75)	4
4-9	3A43315G03	Screw, Mch. (M5x0.8x20)	1
4-10	2S40000G13	Nut, Hexagon (M5x0.8)	1
4-11	65A40348G01	Fuse (5A)	1
5	56C44040J08	Carton, Packing (Master)	1/6
6	56C44040J03	Pad, Packing	2/6
7	54B42124G02	Label, Date Code	1
8	1C44659J02	Assy., Wire Socket (A)	1
9	42B40994G05	Strap, Receiver Mtg.	1
10	56C40988P01	Carton, Packing	1
11	1V42100P87	Assy., Nose Face	1
12	56C43706J02	Tray, Packing	1
13	1V44200J77	Assy., Knob	1
13-1	36B43316J01	Knob, Front	2
13-2	36C42883J01	Knob, Control	2
13-3	56B40230G11	Sack, Polyethylene	1

REF. NO.	PART NO.	DESCRIPTION	Q'TY
C144,C126 C127	23D44333G01	Cap., Elec. (1-50V)	3
C113,C322 C323,C215 C217	23D44333G08	Cap., Elec. (10-16V)	5
C132,C317 C324,C325	23D44333G30	Cap., Elec. (100-10V)	4
C115,C116, C128,C326 C327,C340 C216	23D44333G31	Cap., Elec. (100-16V)	7
C120,C122	23C42909J01	Cap., Elec. (0.22)	2
C119	23C42909J02	Cap., Elec. (0.47)	1
C213,C214 C101,C103 C107,C211	21C45322G31	Cap., Cer. (0.01)	6
C102,C104 C105,C106 C108,C109 C110,C130 C133	21C45322G32	Cap., Cer. (0.022)	9
C219	8C44833J01	Cap., Myl (0.001)	1
C121	21B41870J01	Cap., Cer. (0.05)	1
C111,C129	21B41870J03	Cap., Cer. (0.2)	2
C124,C125	8C44833J11	Cap., Myl. (0.0068)	2
C117,C123	8C44833J19	Cap., Myl. (0.033)	2
C112	8C44833J05	Cap., Myl. (0.0022)	1
C118	8C42195G07	Cap., Fix. P.S. (470P)	1
C305,C306	23D44333G05	Cap., Elec. (4.7-25V)	2
C342,C343	23D44333G48	Cap., Elec. (470-10V)	2
C344	23C42170G22-052	Cap., Elec. (1000-16V)	1
C309,C310	23D44333G18	Cap., Elec. (33-10V)	2
C341	23D44333G19	Cap., Elec. (33-16V)	1
C328, C329	21C45322G26	Cap., Fix. Cer. (330P)	2
C302,C303	21C45322G29	Cap., Cer. (0.0022)	2
C311,C312	8C44833J07	Cap., Myl.(0.0033)	2
C207	8C44833J05	Cap., Myl.(0.0022)	1
C313,C314 C318,C319	23C42909J02	Cap., Elec. (0.47-25V)	4
C345,C346 C206	8C44833J13	Cap., Myl (0.01)	3
C202	21C45322G27	Cap., Cer. (470P)	1
C315,C316 C205,C209 C310,C212	21B41870J02	Cap., Cer. (0.1)	6
C203	8C44833J17	Cap., Myl. (0.022)	1
C208	8C44833J11	Cap., Myl. (0.0068)	1
C201	23D44333G02	Cap., Elec. (3.3-25V)	1
C204	8C42195G13	Cap., P.S. (120P)	1
C218	8C42195G11	Cap., P.S. (220P)	1
C301	23D44333G24	Cap., Elec. (47-10V)	1
C401~403	21B41880J03	Cap., Through	1
C134,C135 C307,C308	21C45322G22	Cap., Cer. (100P)	4
C320,C321	21C45322G25	Cap., Cer. (220P)	2

REF.NO.	PART NO.	DESCRIPTION	Q'TY
VR101	18C41732G03	Res., Variable (4.7K)	1
R117	6D44501G18	Res., C.F. (68-1/4)	1
R106,R115, R314,R315, R322,R323, Re28,R329, R346	6D44501G20	Res., C.F. (100-1/4)	9
R102,R108, R109,R120, R201,R208	6D44501G26	Res., C.F. (330-1/4)	6
R129,R215 R216	6D44501G28	Res., C.F. (470-1/4)	3
R105	6D44501G30	Res., C.F. (680-1/4)	1
R111,R127, R126,R131, R136,R137, R350,R203 R204	6D44501G32	Res., C.F. (1K-1/4)	9
R134,R135, R222	6D44501G34	Res., C.F. (1.5K-1/4)	3
R110,R121, R130,R132, R348,R349, R207,R218	6D44501G36	Res., C.F. (2.2K-1/4)	8
R114,R320, R321	6D44501G38	Res., C.F. (3.3K-1/4)	3
R141,R142,	6D44501G41	Res., C.F. (5.6K-1/4)	2
R316,R317	6D44501G40	Res., C.F. (4.7K-1/4)	8
R107,R112, R113,R104, R210,R214			
R225	6D44501G13	Res., C.F. (27-1/4)	1
R125,R308, R309,R220	6D44501G46	Res., C.F. (15K-1/4)	4
R143	6D44501G47	Res., C.F. (18K-1/4)	1
R118,R306, R307	6D44501G52	Res., C.F. (47K-1/4)	3
R123,R133, R212	6D44501G55	Res., C.F. (82K-1/4)	3
R122,R302 R303	6D44501G56	Res., C.F. (100K-1/4)	3
R119	6D44501G59	Res., C.F. (180K-1/4)	1
R124,R202	6D44501G62	Res., C.F. (330K-1/4)	2
R138	6D44744G19	Res., C.F. (82-1/2)	1
R139	6D44744G25	Tes., C.F. (270-1/2)	1
R312,R313	6D44501G72	Res., C.F. (2.2M-1/4)	2
R324,R325	6D44501G22	Res., C.F. (150-1/4)	2
R326,R327	6D44501G08	Res., C.F. (10-1/4)	2
R304,R305	6D44501G58	Res., C.F. (150K-1/4)	2
R301	6D44501G39	Res., C.F. (3.9K-1/4)	1
R318,R319	6D44501G24	Res., C.F. (220-1/4)	2
R353,R354, R223	6D44501G50	Res., C.F. (33K-1/4)	3
R351,R352	6D44501G53	Res., C.F. (56K-1/4)	2
R340~343	30A41857J01-80(5-5)	Res., Wire	4
R402	6B43205J03	Tes., Metal Film 270-1/2	1

REF. NO.	PART NO.	DESCRIPTION	Q'TY
R219	6D44501G23	Res., C.F. (180–1/4)	1
R224	6D44501G33	Res., C.F. (1.2K–1/4)	1
R209	6D44501G43	Res., C.F. (8.2K–1/4)	1
R206,R213 R221	6D44501G44	Res., C.F. (10K–1/4)	3
R205	6D44501G48	Res., C.F. (22K–1/4)	1
R211	6D44501G54	Res., C.F. (68K–1/4)	1
R401	6D40801G39	Res., C.F. (100–1/2)	1
R103,R345 R217	6D44501G45	Res., C.F. (12K–1/4)	3
TR202, TR203 TR204	48S44580J01	Transistor 2SC1675M	1
	48S44578J01	Transistor 2SC945(L)P	2
TR101, TR102, TR103, TR104, TR105, TR201	48S41815J02	Transistor 2SC829(B)	6
TR309, TR310	48S41785J03	Transistor 2SA738C	2
TR301, TR302	48S44885G01	Transistor 2SC828S	2
TR305, TR306	48S44886G01	Transistor 2SC1317Q	2
TR303, TR304	48S43238G01	Transistor 2SA495Y	2
TR311	48S40170G01	Transistor 2SC373	1
TR307, TR308	48S41784J03	Transistor 2SC1368C	2
IC101	51S42908J01	IC MPX (MC1310P)	1
IC301 IC302	51S40515P01	IC μPC 566H	2
D201	48B41768G01	Diode IN60	1
D104,D105	48S134816	Diode 1S1555	2
D102,D103	48S42996J01	Diode Silicon	2
D101	48S42098J07	Diode Zener	1
D301,D302	48S44107J01	Varistor	2
T202	24B44575J02	IFT, AM	1
T101	24B44508J01	Coil, Disc FM (Gry)	1
T102	24B44509J01	Coil, Disc FM (Blu)	1
T201	24C42189G04	Coil, AM OSC	1
CFM-201	24C44577J01	IFT, Ceramic AM	1
L202	24B44179J01	Coil (4.7μH)	1
L201	24C43247J01	Choke, RF	1
CH101	25C40894G03	Choke	1
CF101, CF102	91B41273J01-017Y	Filter Cer. (10.7M) (Blk)	2
OR	" J02-017Y	Filter Cer. (10.7M) (Blu)	2
OR	" J03-017Y	Filter Cer. (10.7M) (Red)	2
OR	" J04-017Y	Filter Cer. (10.7M) (Org)	2
OR	" J05-017Y	Filter Cer. (10.7M) (Wht)	2
TC202, TC203	20C43248J01	Cap., Variable	2
TC201	20B44001J01	Cap., Trimer	1
	76B44389J01	Ferrite Core	2
S402,S404	40C41003J01	Push, Switch	2

REF.NO.	PART NO.	DESCRIPTION	Q'TY
S405	40C41003J01	Push, Switch	1
PL403 PL404	65C45037G07	Lamp, Pilot	2
PL401, PL402	65C45037G19	Lamp	2
VR402~405	18A43484J01	Volume	1
VR401	18A43476J01	Tuning Shaft & Volume	1

ASSEMBLY PARTS LIST

ASSEMBLY REF. NO.	COMPONENT PARTS REF. NO.	Q'TY
1	2, 3, 4.	
5	6, 7, 8, 9.	
10	11, 12, 13.	
14	15, 16, 20, 21	
16	17, 18, 19.	
23	24, 25, 29, 21	
25	26, 27, 28.	
31	32, 33, 34, 35, 37, 38, 39, 40, 41, 42	
35	36	

SPARE PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	Q'TY
3	40C41003J01	Push, Switch	
9	65C45037G19	Lamp	
11	18B40278P01	Volume	
13	18B40275P01	Tuning Shaft & Volume	
15	1V43900J39	Assy., Panel FM/IF/MPX	
16	1V43900J28	Assy., Panel Main Amp.	
22	1V40600P48	Assy., Panel AM	
24	1C43132J02	Assy., AM/FM Tuner Unit	
30-1	59D42458J04	Motor, DC	
30-2	40C40349J02	Micro. Switch (VER)	
30-3	59C43354J01	Head, Playback Stereo	
30-4	40C43353J02	Micro, Switch (HOR)	
35	1V44200J02	Assy., Wire Socket (B)	
37	9C42905J04	Receptacle, Antenna	
46	65C45037G07	Lamp, Pilot	
50	30A43803G01-350	Dial Cord	
53	1A44025J02	Assy., Eject Knob & Knob Plate	
54	36A44012J02	Knob, Push	
55	36A44012J03	Knob, Push	
56	36A44012J04	Knob, Push	
60	1C44038J07	Assy., Nose Piece	
67	36B43316J01	Knob. Front	
68	36C42883J01	Knob. Control	
4-11	65A40348G01	Fuse (5A)	
72	42B40242P01	Belt, Drive	
73	42B40242P03	Belt, Drive	