STR-6046A

USA, Canada and AEP Model

FM STEREO/FM-AM RECEIVER

SPECIFICATIONS

FM TUNER SECTION

Frequency range:	87.5 MHz to 108 MHz
Usable sensitivity:	2.2 μV (IHF) 1.7 μV (S/N = 30 dB)
Signal-to-noise ratio:	68 dB
Capture ratio:	1.5 dB
Frequency response:	30 Hz to 15 kHz $\pm^{0}_{2}$ dB
Stereo separation:	Greater than 35 dB at 400 Hz
Harmonic distortion:	Mono; 0.3 % at 400 Hz 100 % Mod. Stereo; 0.8 % at 400 Hz 100 % Mod.

A-M TUNER SECTION

Frequency range:	530 kHz to 1,605 kHz
Sensitivity:	48 dB/m, built-in bar antenna 30 μV, external antenna
Signal-to-noise ratio:	50 dB
Harmonic distortion:	0.8 %

AUDIO AMP SECTION

Dynamic power output: (IHF constant power supply method)	65 watts (8 ohms), 80 watts (4 ohms), both channels driven simultaneously
Continuous RMS power output:	25 watts (8 ohms), 30 watts (4 ohms) one channel driven separately (at 1 kHz) 22 watts per channel (8 ohms), both channels driven simultaneously (at 1 kHz)
Harmonic distortion:	Less than 0.8 % at 1 kHz at continuous RMS power output Less than 0.1 % at 1 watt output
Frequency response:	PHONO; RIAA equalization curve ± 2 dB MIC; 30 Hz to 40 kHz $\pm^{0}_{3}$ dB TAPE REC/PB ;20 Hz to 40 kHz $\pm^{0}_{3}$ dB AUX

GENERAL

Power consumption:	80 watts (USA Model) 120 watts (Canada Model) 210 watts (AEP Model)
Power requirement:	120 volts, 60 Hz ac (USA and Canada Model) 110, 127, 220, 240 volts, 50/60 Hz ac (AEP Model)
Dimensions:	435 (w) x 145 (h) x 345 (d) mm $17\frac{1}{8}$ (w) x $5\frac{11}{16}$ (h) x $13\frac{11}{16}$ (d) inches
Net weight:	9 kg (19 lb 13 oz)

SONY

SERVICE MANUAL

TABLE OF CONTENTS

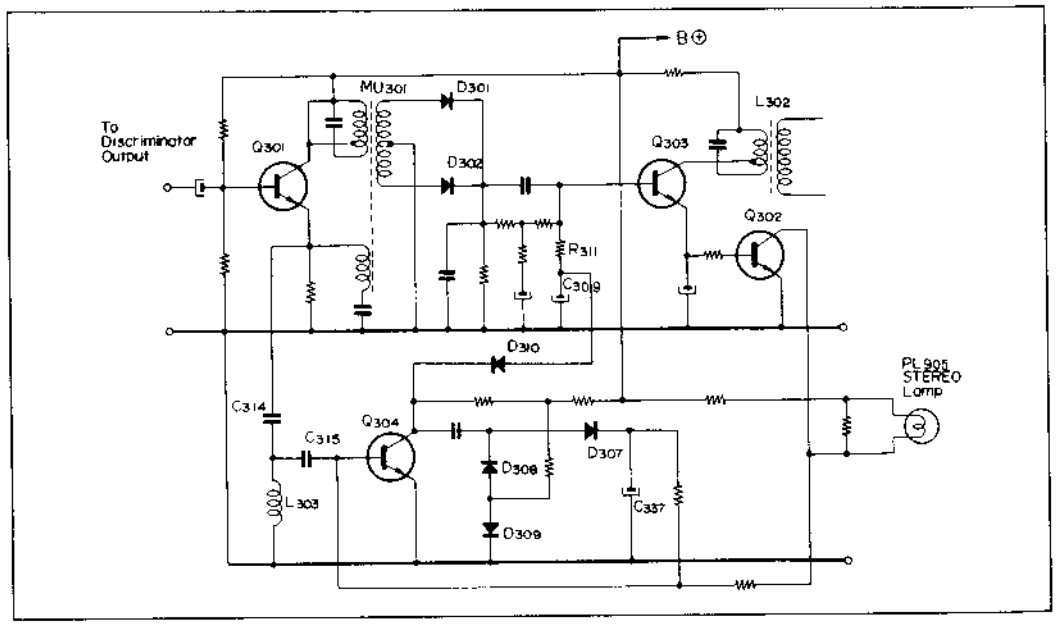
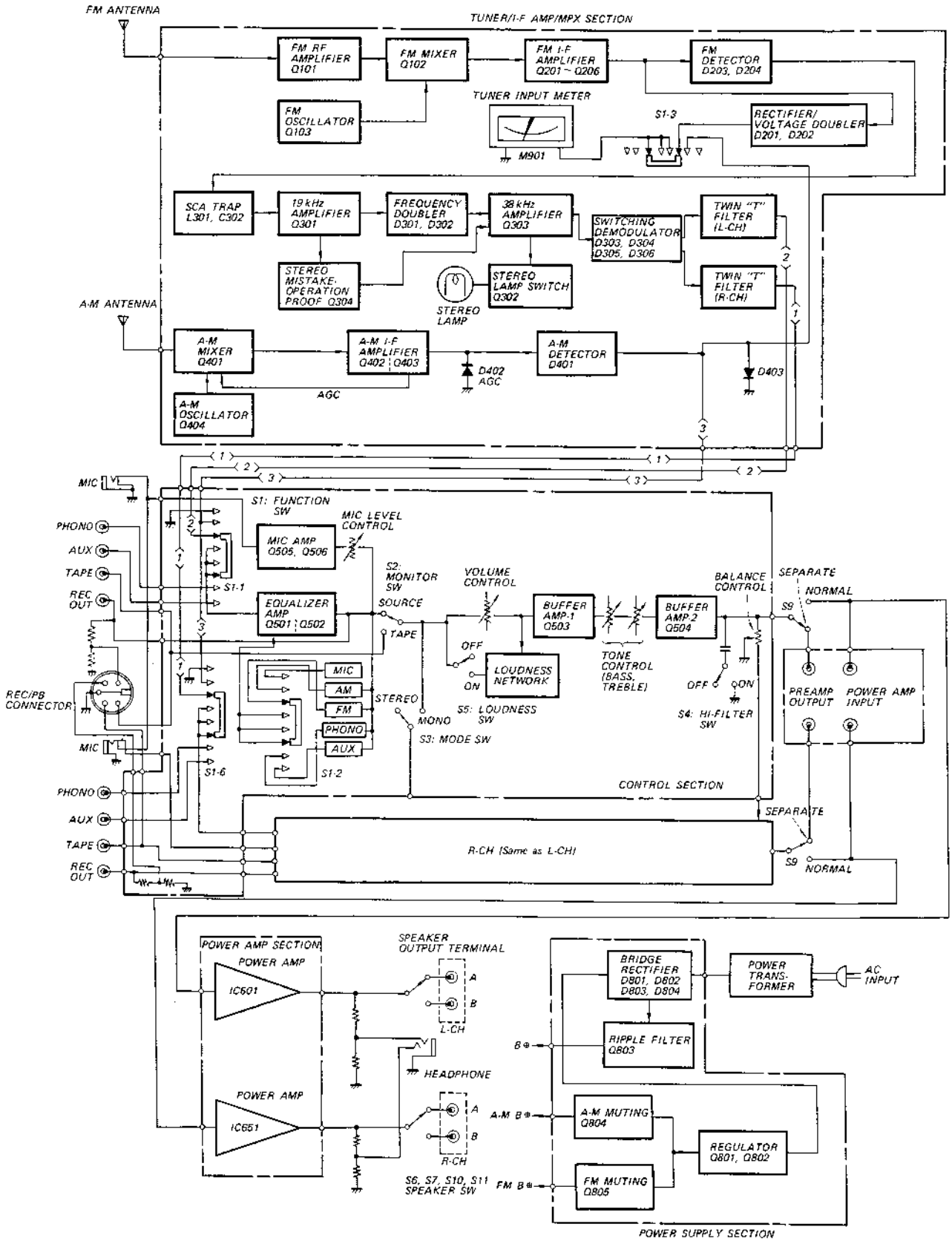


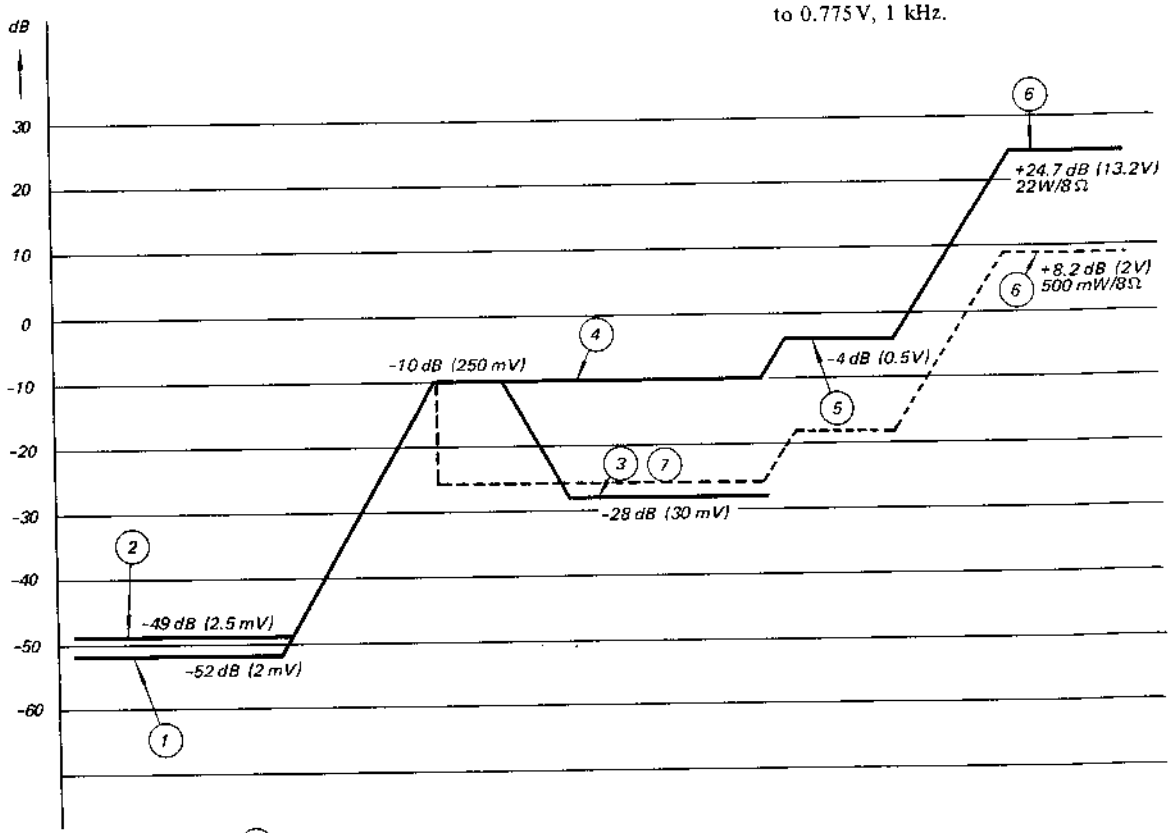
Fig. 1-1. Stereo-mono automatic switching circuit

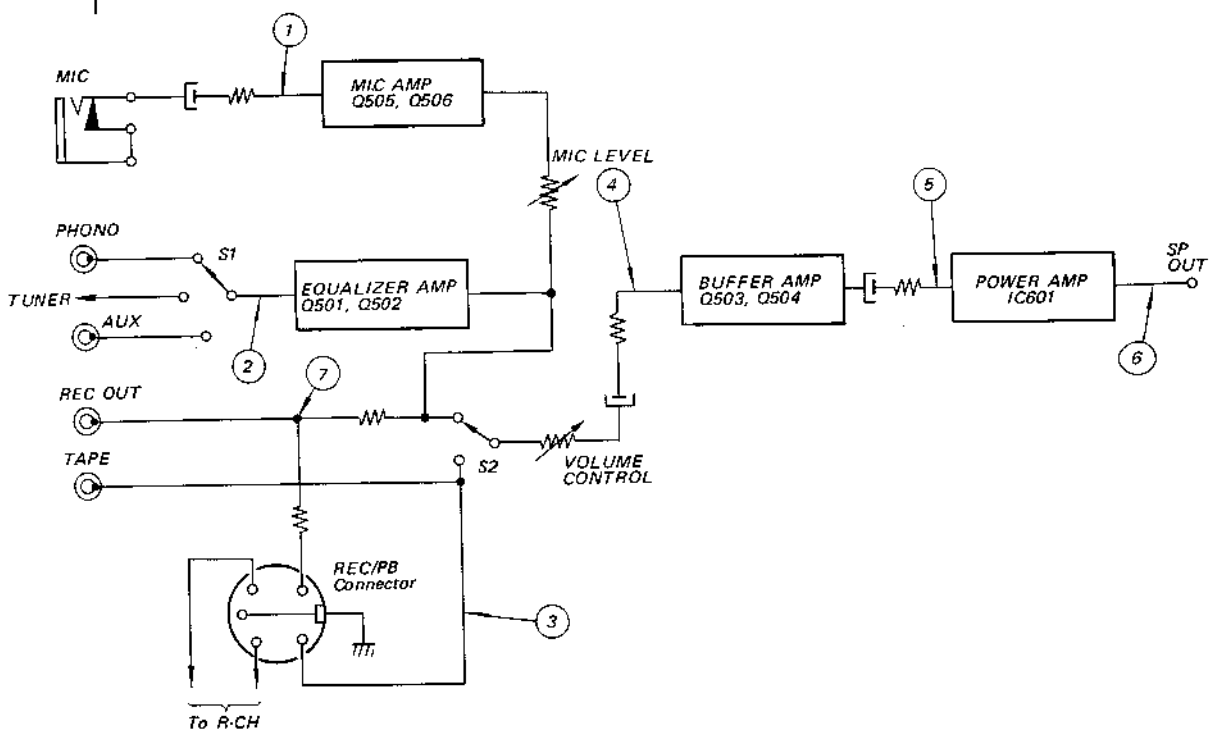
1-3. BLOCK DIAGRAM



1-4. LEVEL DIAGRAM

Note: Signal voltages are measured with ac VTVM and expressed in dB referred to 0.775 V, 1 kHz.





SECTION 2
DISASSEMBLY AND REPLACEMENT

WARNING

Unplug the ac power cord before starting any disassembly or replacement procedures.

2-1. WOODEN CASE REMOVAL

1. Remove the two screws at each side of the wooden case as shown in Fig. 2-1.
2. Carefully push the wooden case backward and pull it up as shown in Fig. 2-1.

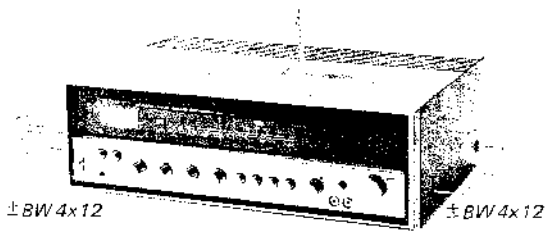


Fig. 2-1. Wooden case removal

2-2. BOTTOM PLATE REMOVAL

1. Remove the eight screws shown in Fig. 2-2.

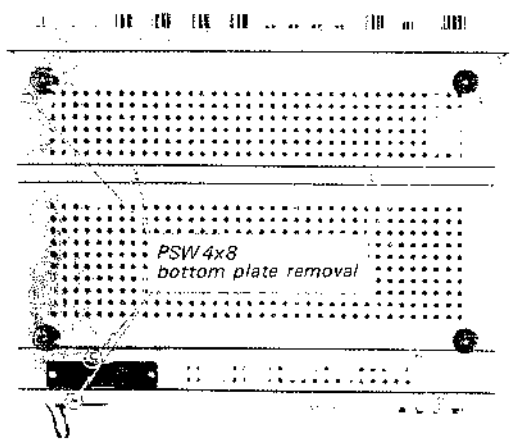


Fig. 2-2. Bottom plate removal

2-3. DIAL GLASS, CONTROL PANEL AND FRONT PANEL REMOVAL

1. Remove the wooden case as described in Procedure 2-1.
2. Remove the five screws securing the dial glass retainers as shown in Fig. 2-3.
   This frees the dial glass.
3. Remove all the knobs (POWER, VOLUME, BALANCE, BASS, TREBLE, FUNCTION, MIC MIX and TUNING) except the pushbuttons.
4. Remove the two hexagon-head collars securing the VOLUME control and FUNCTION switch to the control panel as shown in Fig. 2-4.
   Place a piece of cardboard between the wrench and control panel to avoid marring the panel.
   This frees the control panel.
5. Remove the four screws securing the front panel to the front subchassis as shown in Fig. 2-5. This frees the front panel.

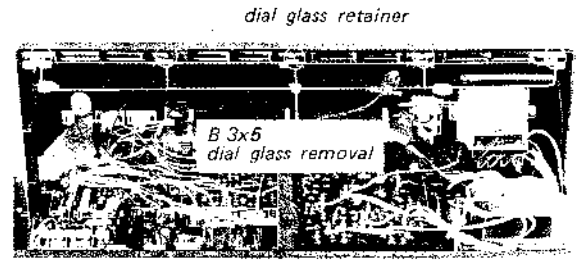


Fig. 2-3. Dial glass removal

Fig. 2-4. Control panel removal

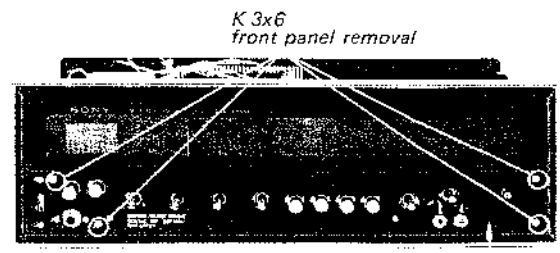


Fig. 2-5. Front panel removal

2-4. DIAL CORD RESTRINGING

Preparation

1. Remove the wooden case as described in Procedure 2-1.
2. Cut a 2,020 mm (78 17/32 inches) length of 0.3 mm (1/64 inch) diameter dial cord.
3. Rotate the tuning capacitor shaft fully clockwise (minimum capacitance position) and the slit of the tuning drum should be positioned as shown in Fig. 2-6.

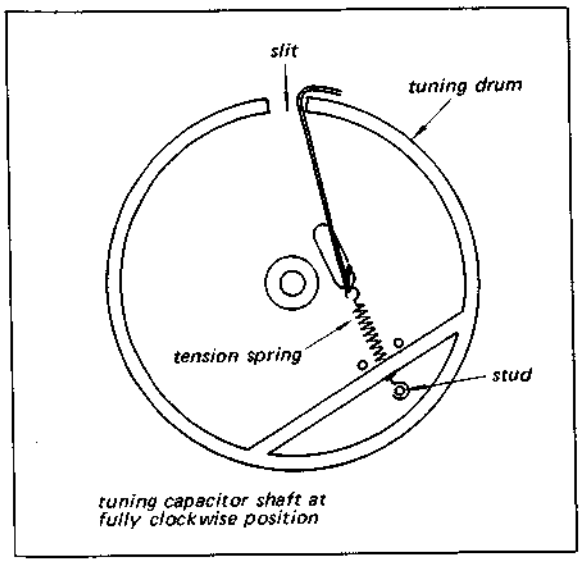


Fig. 2-6. Tension spring installation

Procedure

1. Tie the end of the cord to a spring and hook the spring to the stud on the tuning drum as shown in Fig. 2-6.
2. Wrap the dial cord one and half turns around the drum and string the dial cord in order as shown in Fig. 2-7.
3. At the finish point, pass the doubled end of the cord through the eyelet and tighten the cord and squeeze the eyelet so that the string is under tension (See Fig. 2-8).

   Note: The end of spring should be near the center of tuning drum as shown in Fig. 2-9. Make two knots in the cord to keep it from slipping out of the eyelet (See Fig. 2-8).
4. After completing the dial cord stringing, make sure that the tuning system works properly. Apply a drop of contact cement to the finish point, and then follow the mechanical dial calibration described in Procedure 2-5.

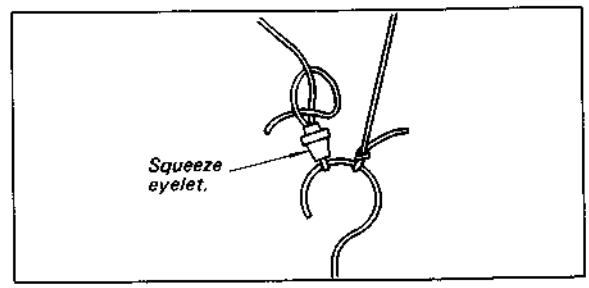


Fig. 2-8. Dial cord finish

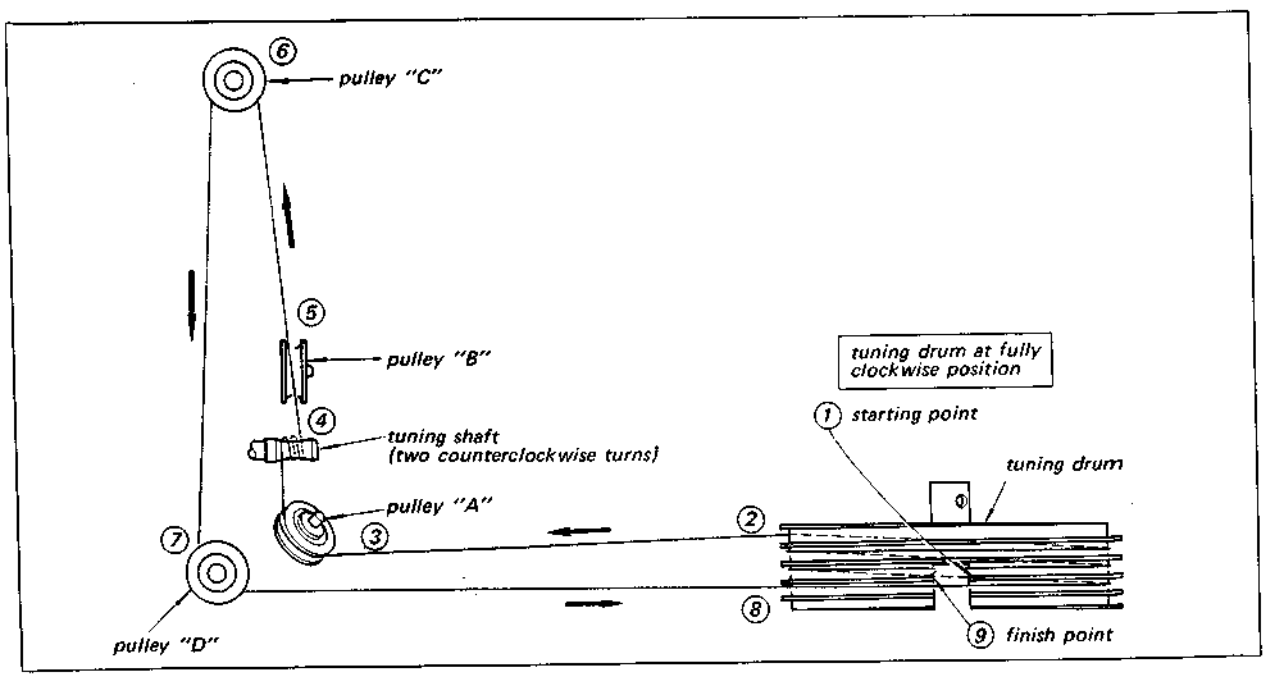


Fig. 2-7. Dial cord stringing

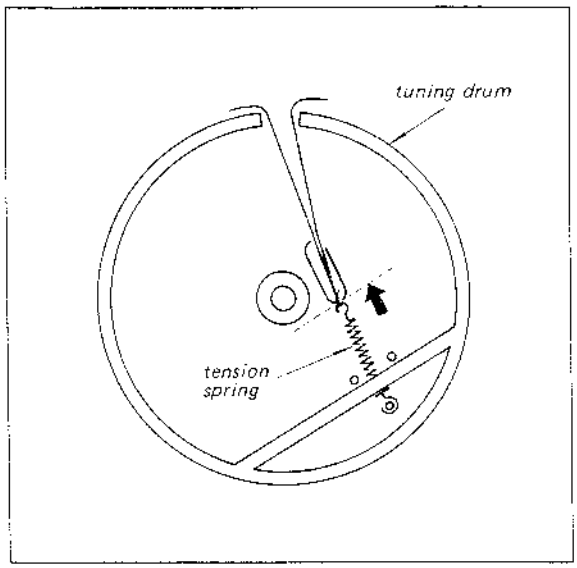


Fig. 2-9. End of dial cord stringing

2-5. MECHANICAL DIAL CALIBRATION

1. Put the dial pointer on the cord as shown in Fig. 2-10, and then tune the receiver to the local fm station. Move the dial pointer to the position where the pointer indicates the local station's carrier frequency. Apply a drop of contact cement to it.

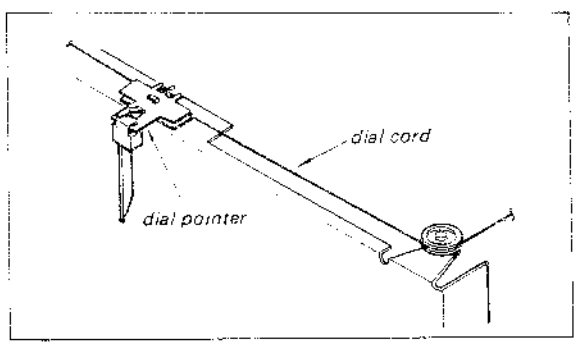


Fig. 2-10. Dial pointer installation

2-6. TUNER INPUT METER REPLACEMENT

1. Remove the wooden case as described in Procedure 2-1.
2. Remove the two screws securing the meter lamp shade to the front subchassis as shown in Fig. 2-11.
   This frees the meter lamp shade.

   Note: Tuner input meter is fixed to the front subchassis with double stuck tape.
3. Pry open the tuner input meter from the front subchassis with a screwdriver.

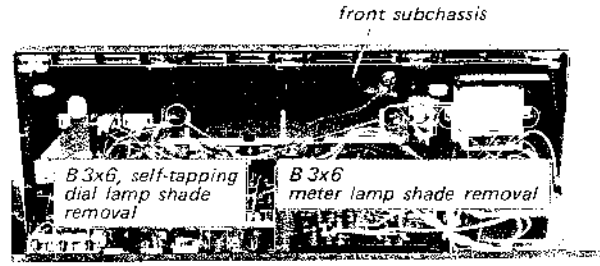


Fig. 2-11. Tuner input meter and dial lamp shade replacement

2-7. CONTROL CIRCUIT BOARD REMOVAL

1. Remove the wooden case, bottom plate and control panel as described in Procedure 2-1, 2-2 and 2-3.
2. Remove the meter lamp shade as described in Procedure 2-6.
3. Remove the two screws securing the dial lamp shade to the front subchassis as shown in Fig. 2-11.
4. Remove the two screws securing the control circuit board to the front subchassis as shown in Fig. 2-12.
5. Remove the three screws securing control circuit board to the chassis as shown in Fig. 2-13.
6. This frees the control circuit board together with the bracket.

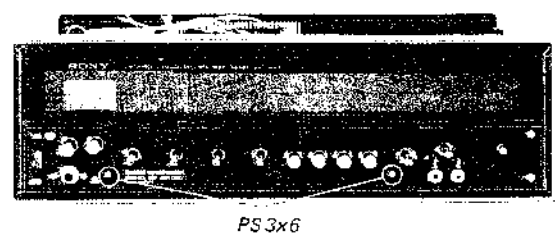


Fig. 2-12. Control circuit board removal

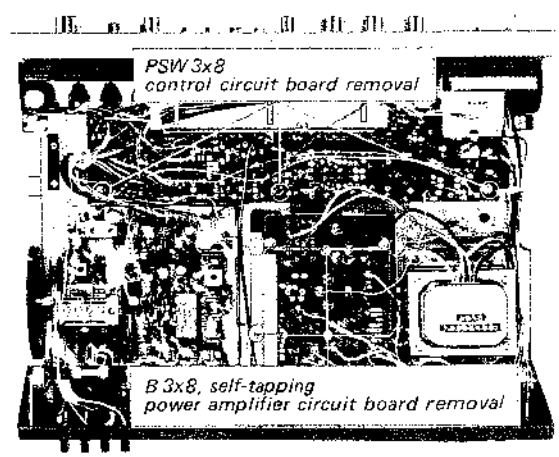


Fig. 2-13. Control and power amplifier circuit board removal

2-8. POWER AMP CIRCUIT BOARD REMOVAL

1. Remove the wooden case as described in Procedure 2-1.
2. Remove the four self-tapping screws shown in Fig. 2-13.
3. Remove the power amp circuit board together with the heat sink.

2-9. CHASSIS LAYOUT

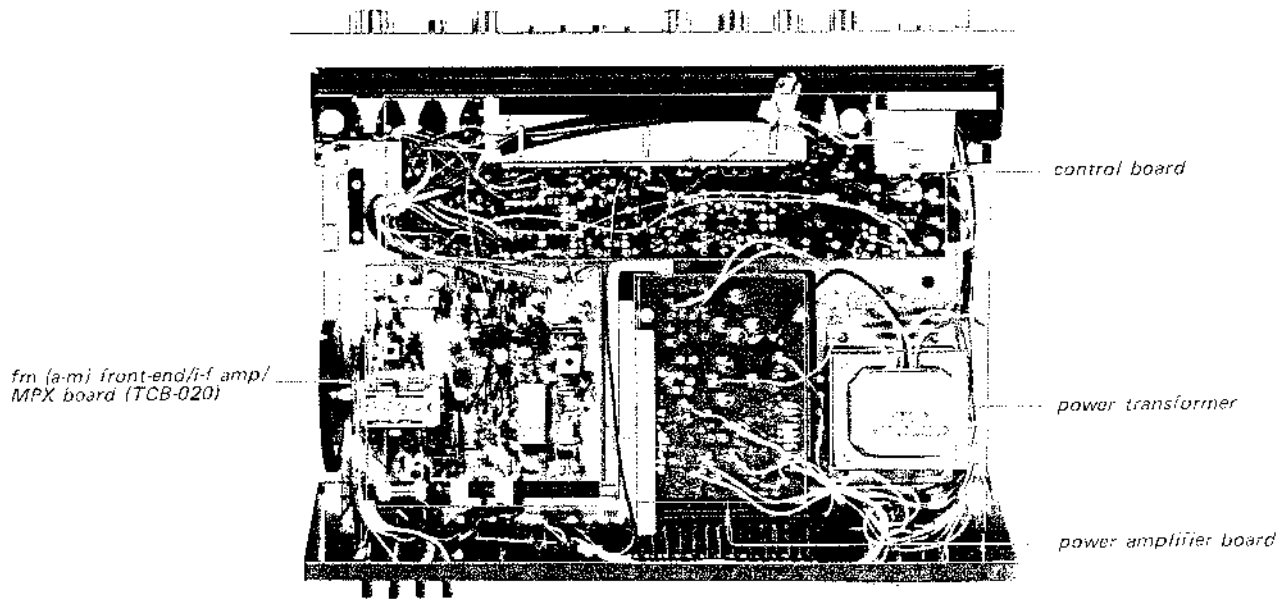


Fig. 2-14. Chassis layout

SECTION 3
ALIGNMENT AND ADJUSTMENT

3-1. FM I-F AND DISCRIMINATOR ALIGNMENT

CAUTION

The ceramic filters in the fm i-f circuit are selected according to their specified center frequencies and color coded as shown in Fig. 3-1 and listed in Table 3-1. Check the color code of the filters to identify the same center frequency when replacing any of these filters.

TABLE 3-1.
FM I-F CERAMIC FILTERS

Part No.	Color	Specified Center Freq.
1-527-220-11	red	10.70 MHz
1-527-220-21	blue	10.67 MHz
1-527-220-31	orange	10.73 MHz
1-527-220-41	black	10.64 MHz
1-527-220-51	white	10.76 MHz

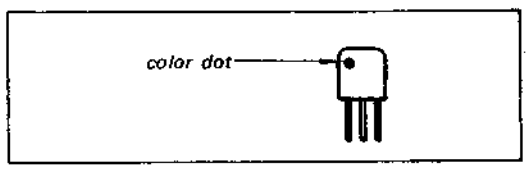


Fig. 3-1. Color dot on ceramic filter

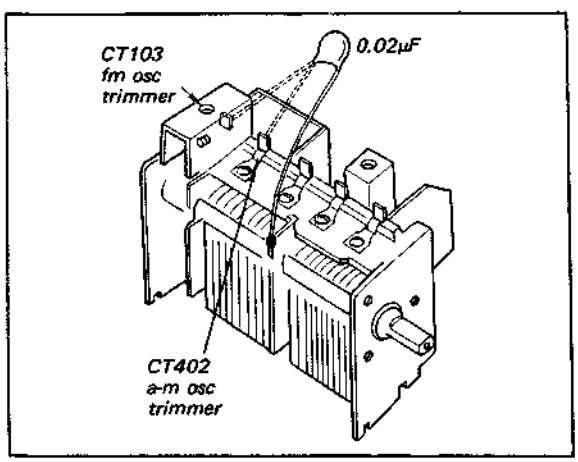


Fig. 3-2. Interruption of fm or a-m local oscillator operation

Note: Local oscillator should be killed when performing this alignment. To stop the local oscillator operation, shunt the oscillator capacitor with a 0.02μF capacitor as shown in Fig. 3-2.

Signal Generator Method

Test Equipment Required

1. Signal generator capable of generating a 10.7 MHz a-m/fm signal.
2. Oscilloscope
   Vertical sensitivity . . . . 100 mV/cm minimum
3. Ac VTVM
4. Alignment tools

Preparation:

1. Connect the input cable of the oscilloscope with alligator clips to R233 and ground on the fm (a-m) front-end/i-f amp/MPX board, and solder a 0.02μF capacitor across these clips as shown in Fig. 3-3.
2. Connect the output cable of the generator across CV102 on the fm (a-m) front-end/i-f amp/MPX board through a 0.02μF coupling capacitor as shown in Fig. 3-4.

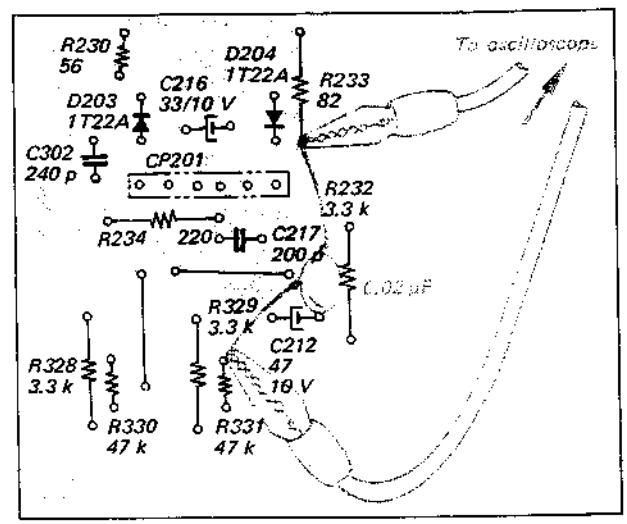


Fig. 3-3. Fm discriminator output connection

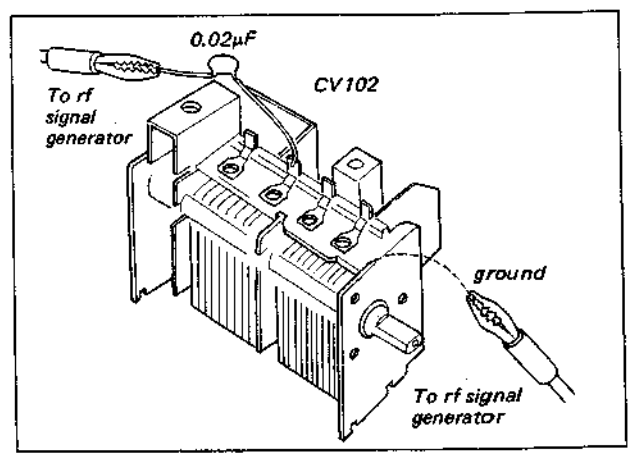


Fig. 3-4. 10.7MHz signal injection

Procedure:

1. With the equipment connected as shown in Fig. 3-5, set the signal-generator controls as follows:

   Frequency . . . . . Specified frequency of ceramic filter. See Table 3-1.
   Modulation . . . . . Fm, 400 Hz, 75 kHz deviation (100 %)
   Output level . . . . . 1,000μV (60 dB)

2. Set the receiver switches as follows:

   FUNCTION switch . . . . . FM STEREO
   MODE switch . . . . . MONO

3. Adjust the signal generator frequency slightly to obtain a maximum output, and then change the signal generator modulation to a-m, 400Hz 30%.
4. If the discriminator transformer IFT201 is not aligned correctly, 400 Hz ripple will be observed as shown in Fig. 3-6.
5. Turn the top core (secondary side) of discriminator transformer IFT201 (see Fig. 3-11) to obtain a minimum indication on the oscilloscope with an alignment tool as shown in Fig. 3-6.

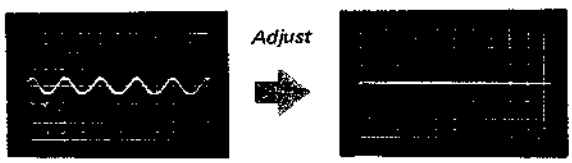


Fig. 3-6. Fm discriminator alignment output response

Note: Turn the core carefully and slowly because the output appearing on the oscilloscope jumps up and down when turning the core. This might cause difficulty in determining the point of minimum output. Also, at both extreme positions of the top core, decreased output will be observed. The real null point should be obtained in the middle of the core thread length, and maximum output appears at each side of the true null point.

6. Change the signal generator modulation to fm, 400 Hz, 75 kHz deviation (100 %).
7. Turn the core of fm IFT101 and the bottom core (primary side) of discriminator transformer IFT-201 (see Fig. 3-11) to obtain the maximum output.

3-2. FM FREQUENCY COVERAGE AND TRACKING ALIGNMENT

Note: Before starting this alignment, the fm i-f and discriminator alignment should be performed.

Test Equipment Required

1. Fm signal generator
2. Ac VTVM
3. Oscilloscope
4. Alignment tools

Preparation:

1. Connect the equipment as shown in Fig. 3-7.
2. Set the receiver switches as follows:

   FUNCTION switch . . FM STEREO
   MODE switch . . . . . MONO

Signal Generator Method

Follow the procedures given in Table 3-2 when performing this alignment with an fm signal generator. Be sure that the dial is mechanically calibrated.

Off-the-Air Signal Method

Frequency coverage and tracking alignment can also be performed by utilizing off-the-air local fm signals. However, before performing the alignment, be sure that the dial is mechanically calibrated.

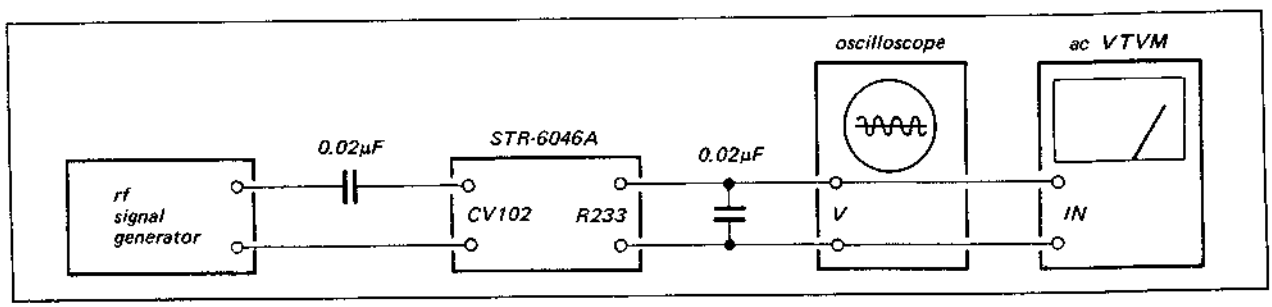


Fig. 3-5. Fm i-f and discriminator alignment test setup by rf signal generator

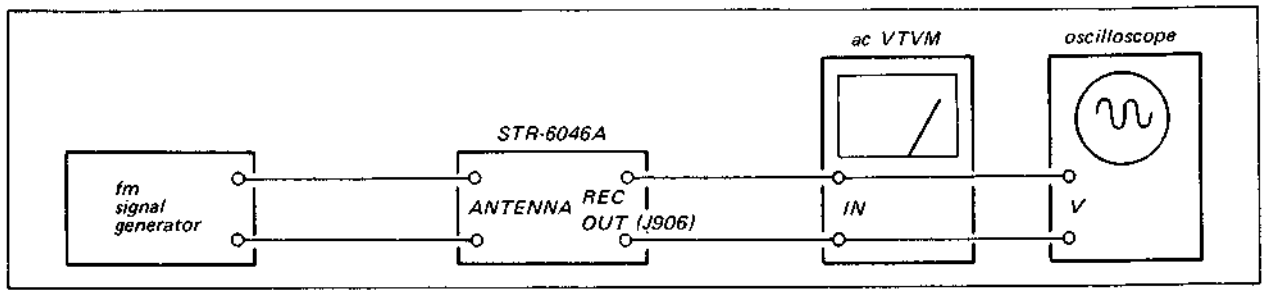


Fig. 3-7. Fm frequency coverage and tracking alignment test setup

TABLE 3-2. FM FREQUENCY COVERAGE AND TRACKING ALIGNMENT

	FREQUENCY COVERAGE ALIGNMENT		**SG Coupling ..... Direct** **SG Output Level ..... 400 Hz, 75 kHz Deviation mod; as low as possible**		
Step	SG Frequency	Receiver Dial Setting	Ac VTVM Connection	Adjust	Indication
1	87.5 MHz	87.5 MHz	REC OUT J906	OSC coil L103 See Fig. 3-11.	Maximum VTVM reading
2	108 MHz	108 MHz		OSC trimmer CT103 See Fig. 3-11.	
	TRACKING ALIGNMENT		**SG Coupling ..... Direct** **SG Output Level ..... 400 Hz, 75 kHz Deviation mod; as low as possible**		
1	87.5 MHz	87.5 MHz	REC OUT J906	Antenna coil L101 RF coil L102 See Fig. 3-11.	Maximum VTVM reading
2	108 MHz	108 MHz		Antenna trimmer CT101 RF trimmer CT102 See Fig. 3-11.	

3-3. FM STEREO SEPARATION ADJUSTMENT

Test Equipment Required

1. Fm stereo signal generator
2. Ac VTVM
3. Oscilloscope

Preparation:

Connect the equipment as shown in Fig. 3-8, then set the fm stereo signal generator controls as follows:

Carrier frequency . . . . 98 MHz
Output level . . . . . 1,000 μV (60 dB)
Mode . . . . . Stereo
Audio (400 Hz) Mod . . 67.5 kHz (90 %)*
Pilot (19 kHz) Mod . . 7.5 kHz (10 %)

* **Note:** 75 kHz (100%) if the metering indicates total modulation (audio-pilot).

Procedure:

1. Precisely tune the receiver to the carrier frequency of stereo signal generator, then turn the top core of switching transformer L302 (see Fig. 3-11) to obtain maximum output at the left channel. Note that this adjustment has a close relationship with stereo distortion.
2. Record the output level of the left channel when the stereo signal generator input selector is set to the left channel.
3. Switch the stereo signal generator input selector to the right channel and read the residual signal level in the left channel.
4. The output-level to residual-level ratio represents the separation. Adjust separation control RT501 (see Fig. 3-9) for minimum residual level. Check the right channel for separation. Usually, about an 8 to 9 dB difference in channel separation exists. Readjust RT501 for minimum difference

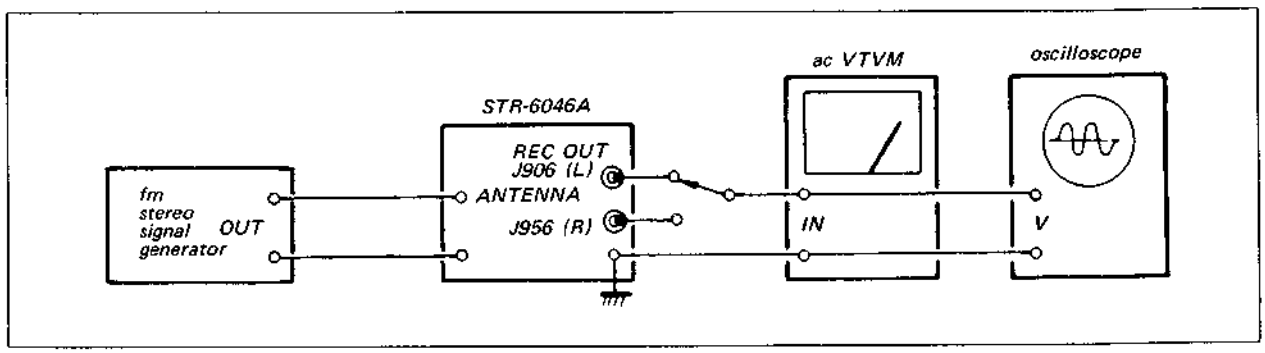


Fig. 3-8. Fm stereo separation adjustment test setup

between left- and right-channel separation. While doing this, remember that the output level also changes according to the setting of RT501.

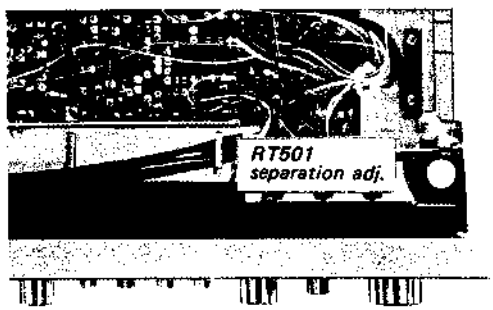


Fig. 3-9. Adjusting parts location

3-4. A-M I-F STRIP ALIGNMENT

Note: The a-m i-f transformers (CFT401 and IFT401) are shipped from the factory with all adjustments set for correct operation. Therefore no adjustment is required in field service.

3-5. A-M FREQUENCY COVERAGE AND TRACKING ALIGNMENT

Preparation:

Set the FUNCTION switch to AM.

Signal Generator Method

Test Equipment Required

1. Signal generator
2. Loop antenna
3. Ac VTVM or oscilloscope

Procedure:

With the equipment connected as shown in Fig. 3-10, follow the procedures given in Table 3-3 when performing this alignment with an a-m signal generator. Be sure that the dial is mechanically calibrated.

Off-the-Air Signal Method

Frequency coverage and tracking alignment can also be performed by utilizing off-the-air local a-m signals. However, before performing this alignment, be sure that the dial is mechanically calibrated.

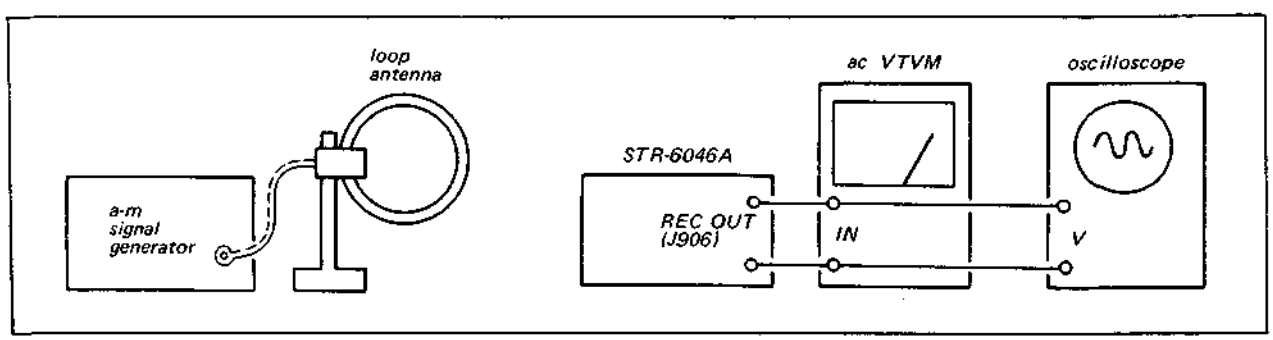


Fig. 3-10. A-m frequency coverage and tracking alignment test setup

TABLE 3-3. A-M FREQUENCY COVERAGE AND TRACKING ALIGNMENT

	FREQUENCY COVERAGE ALIGNMENT		SG Coupling ..... Loop antenna SG Output Level .... 400Hz, 30% mod; as low as possible		
Step	SG Frequency	Receiver Dial Setting	Ac VTVM Connection	Adjust	Indication
1	550 kHz	550 kHz	REC OUT J906	OSC coil L402 See Fig. 3-11.	Maximum VTVM reading
2	1,600 kHz	1,600 kHz		OSC trimmer CT402 See Fig. 3-11.	
	TRACKING ALIGNMENT		SG Coupling ..... Loop antenna SG Output Level ... 400Hz, 30% mod; as low as possible		
1	600 kHz	Tune to the SG signal.	REC OUT J906	Position of bar antenna L401. See Fig. 3-11.	Maximum VTVM reading
2	1,400 kHz			Antenna trimmer CT401 See Fig. 3-11.	

Adjustment Parts Location:

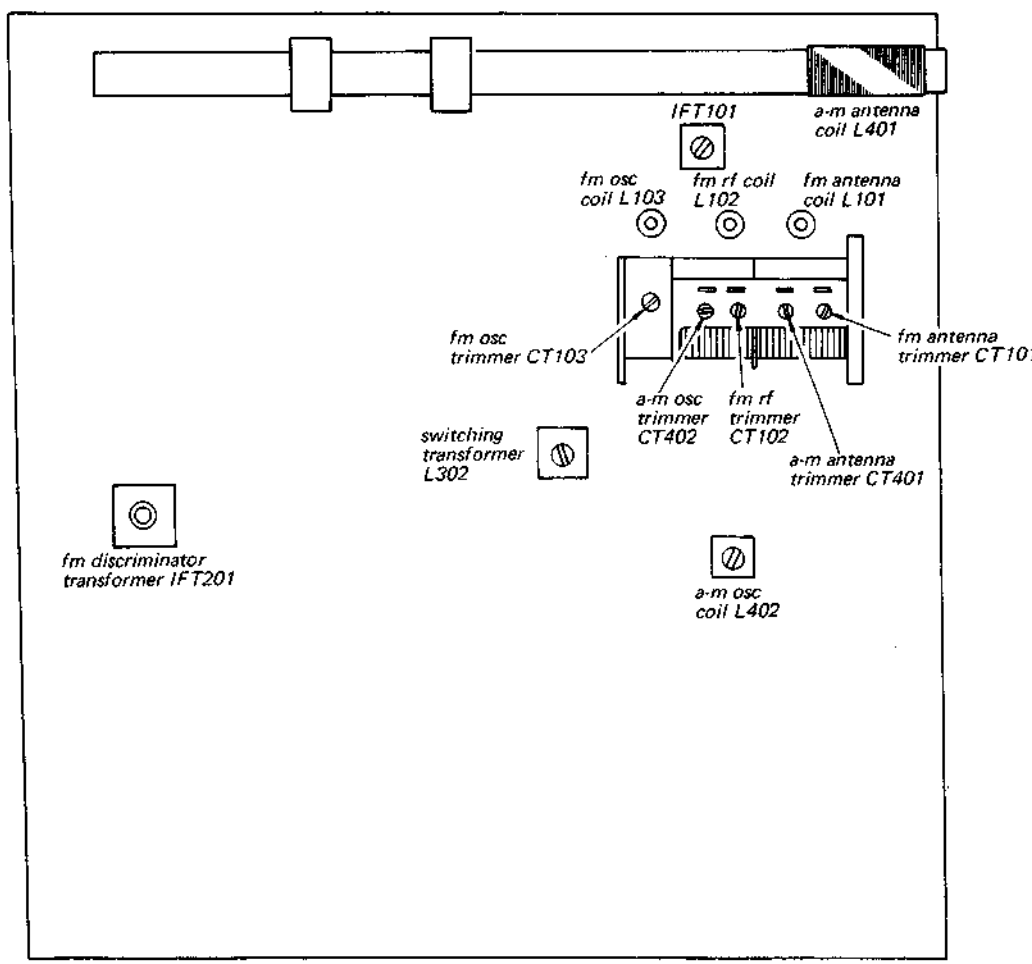


Fig. 3-11. Adjustment parts location

SECTION 4
REPACKING

The original shipping carton and packing materials are the ideal containers for shipping the unit. However to secure the maximum protection, the receiver must be repacked in these materials precisely as before. The proper repacking procedures are shown in Fig. 4-1.

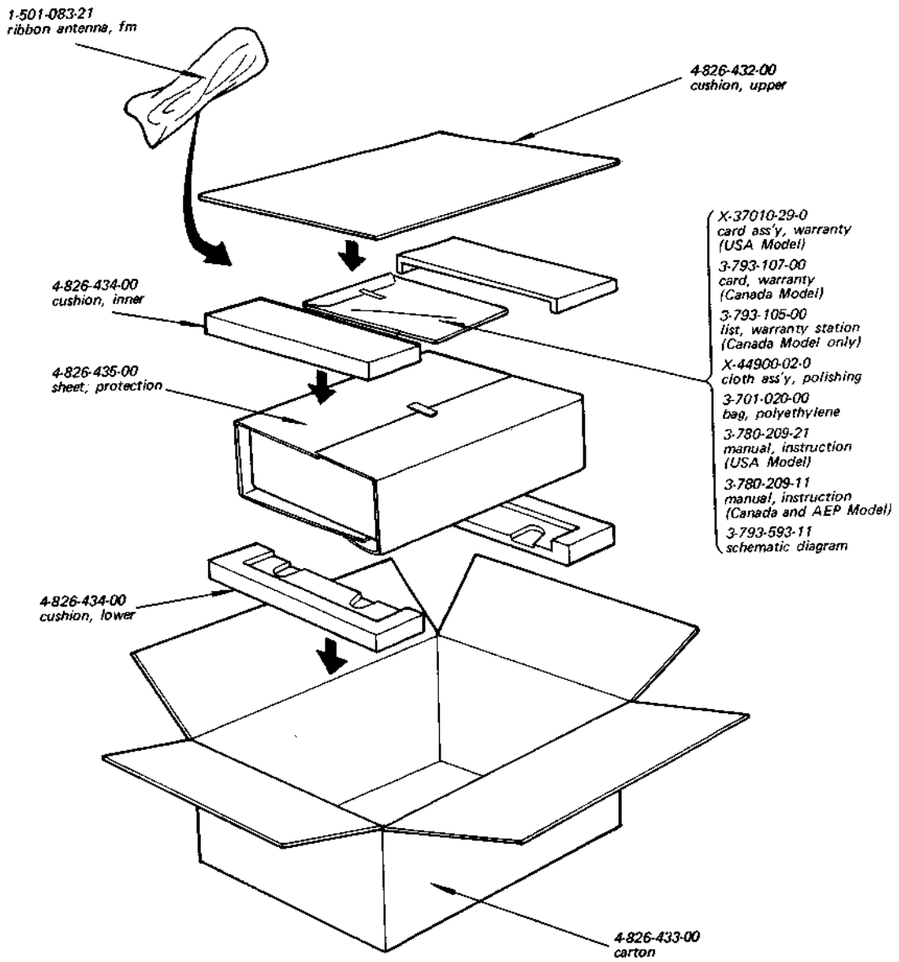


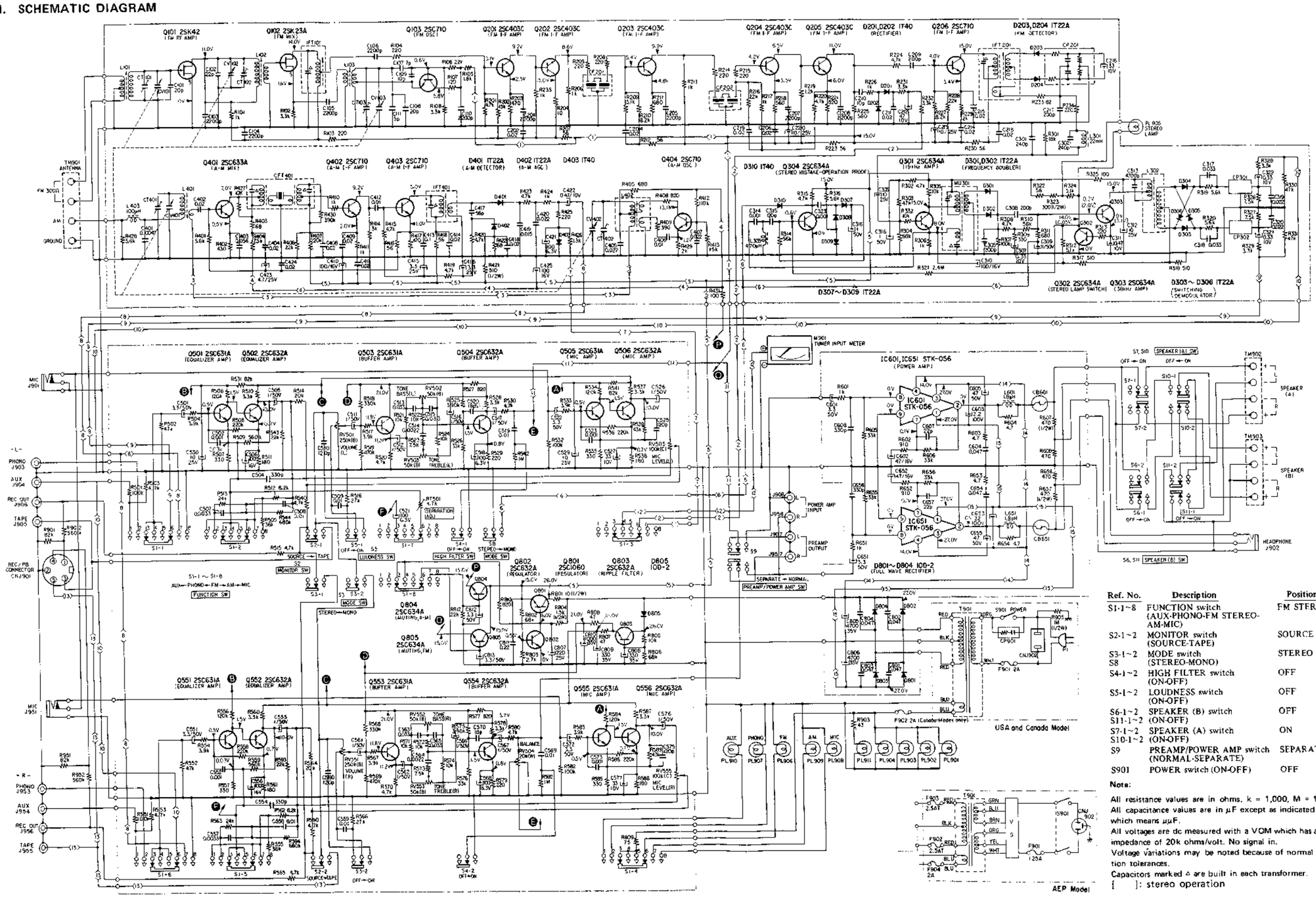
Fig. 4-1. Repacking

Note: Applicable serial number
USA Model: 800,001 and later
Canada Model: 700,001 and later
AEP Model: 500,001 and later

MEMO

SECTION 5
DIAGRAMS

5-1. SCHEMATIC DIAGRAM



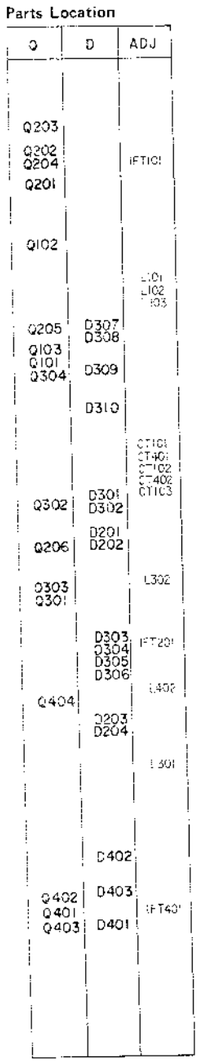
Ref. No.	Description	Position
S1-1~8	FUNCTION switch (AUX-PHONO-FM STEREO-AM-MIC)	FM STEREO
S2-1~2	MONITOR switch (SOURCE-TAPE)	SOURCE
S3-1~2 S8	MODE switch (STEREO-MONO)	STEREO
S4-1~2	HIGH FILTER switch (ON-OFF)	OFF
S5-1~2	LOUDNESS switch (ON-OFF)	OFF
S6-1~2 S11-1~2	SPEAKER (B) switch (ON-OFF)	OFF
S7-1~2 S10-1~2	SPEAKER (A) switch (ON-OFF)	ON
S9	PREAMP/POWER AMP switch (NORMAL-SEPARATE)	SEPARATE
S901	POWER switch (ON-OFF)	OFF

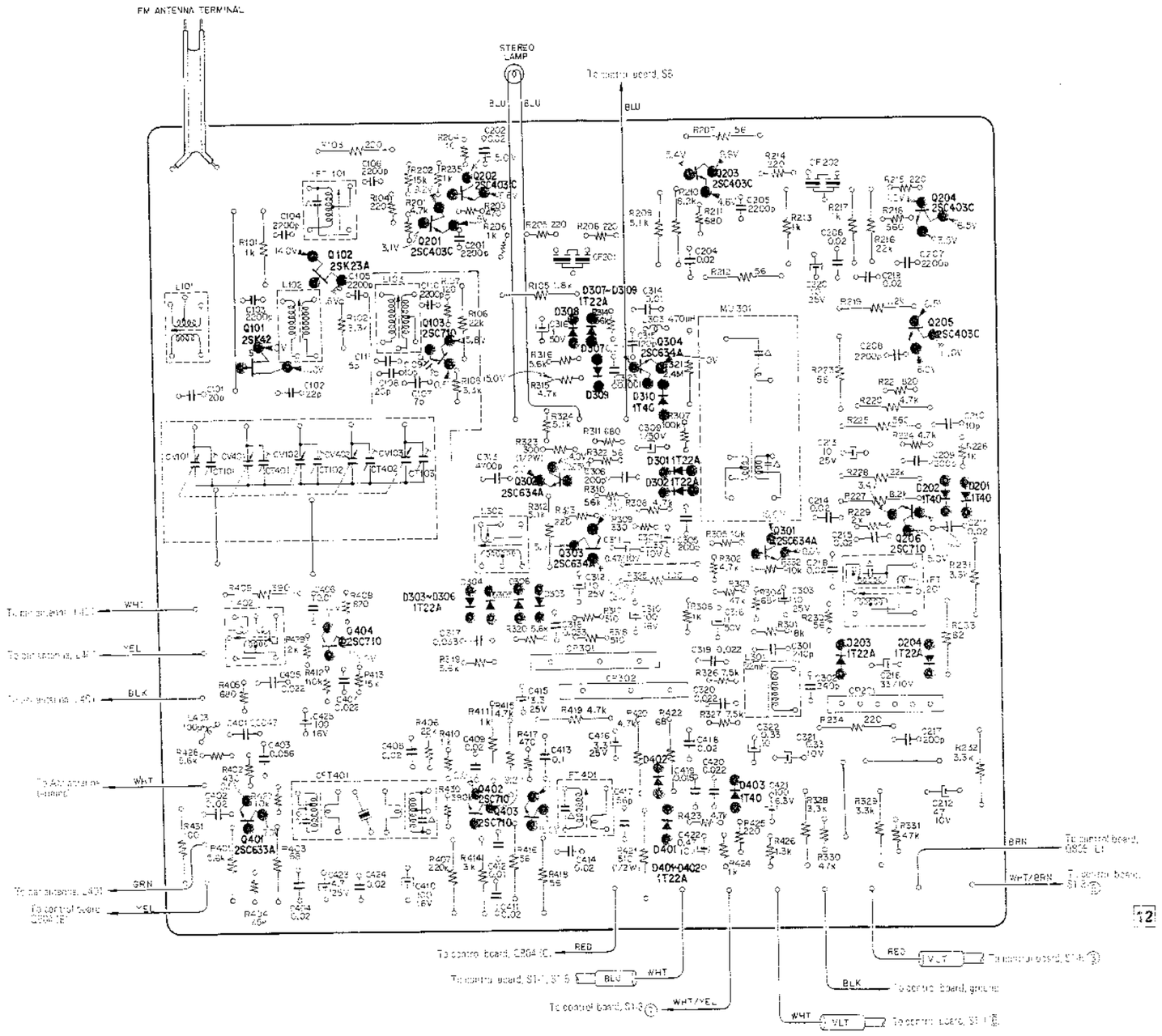
Note:

All resistance values are in ohms, k = 1,000, M = 1,000 k.
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages are dc measured with a VOM which has an input impedance of 20k ohms/volt. No signal in.
Voltage variations may be noted because of normal production tolerances.
Capacitors marked Δ are built in each transformer.
[ ]: stereo operation

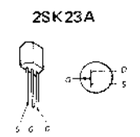
5-2. MOUNTING DIAGRAM — Fm (A-m) Front-End/I-f Amp/MPX Board — (TCB-020)

— Conductor Side —

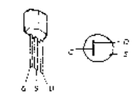




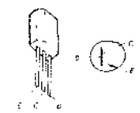
2SK23A



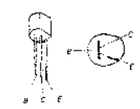
2SK42



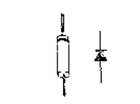
2SC403C
2SC633A
2SC634A



2SC710

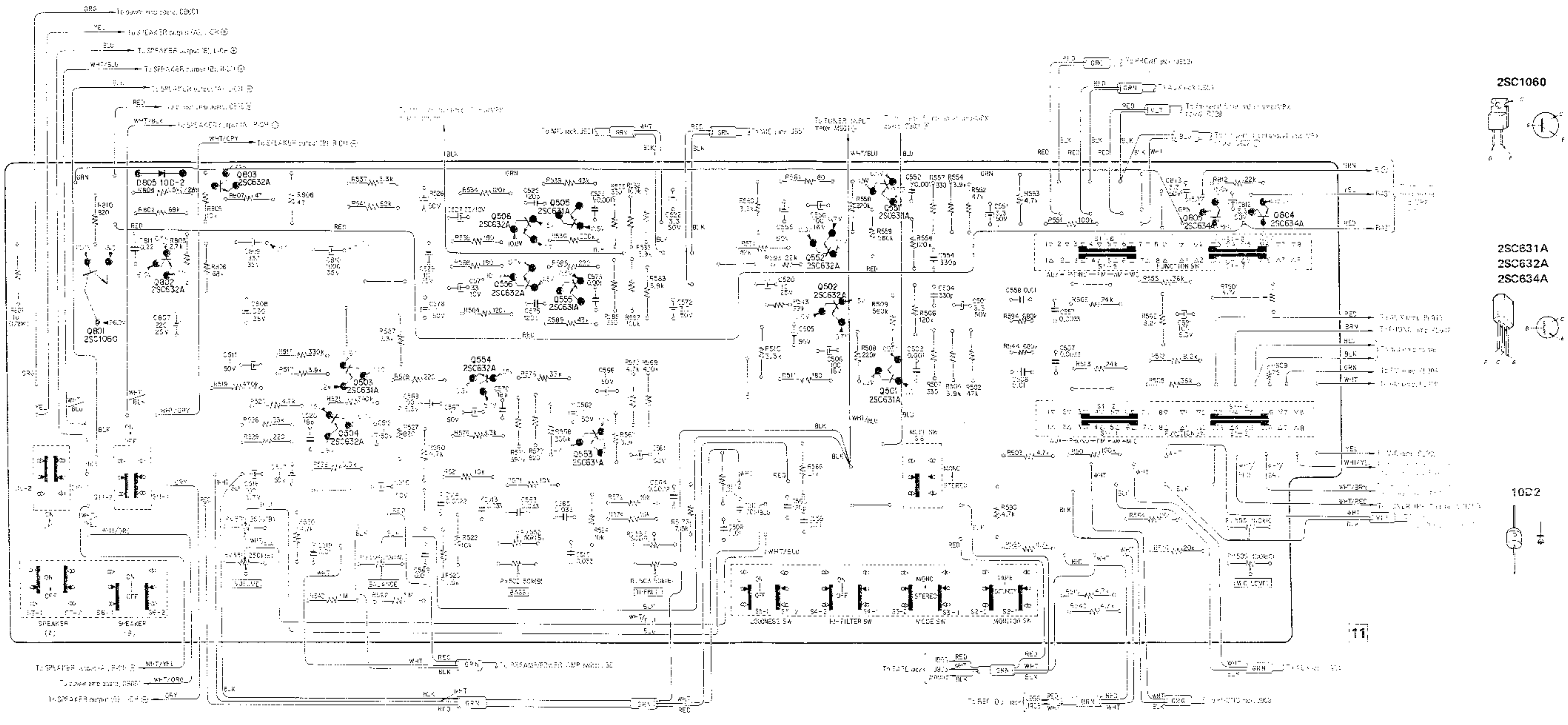


1S351M
1T22A
1T40



5-3. MOUNTING DIAGRAM – Control Board –

– Conductor Side –

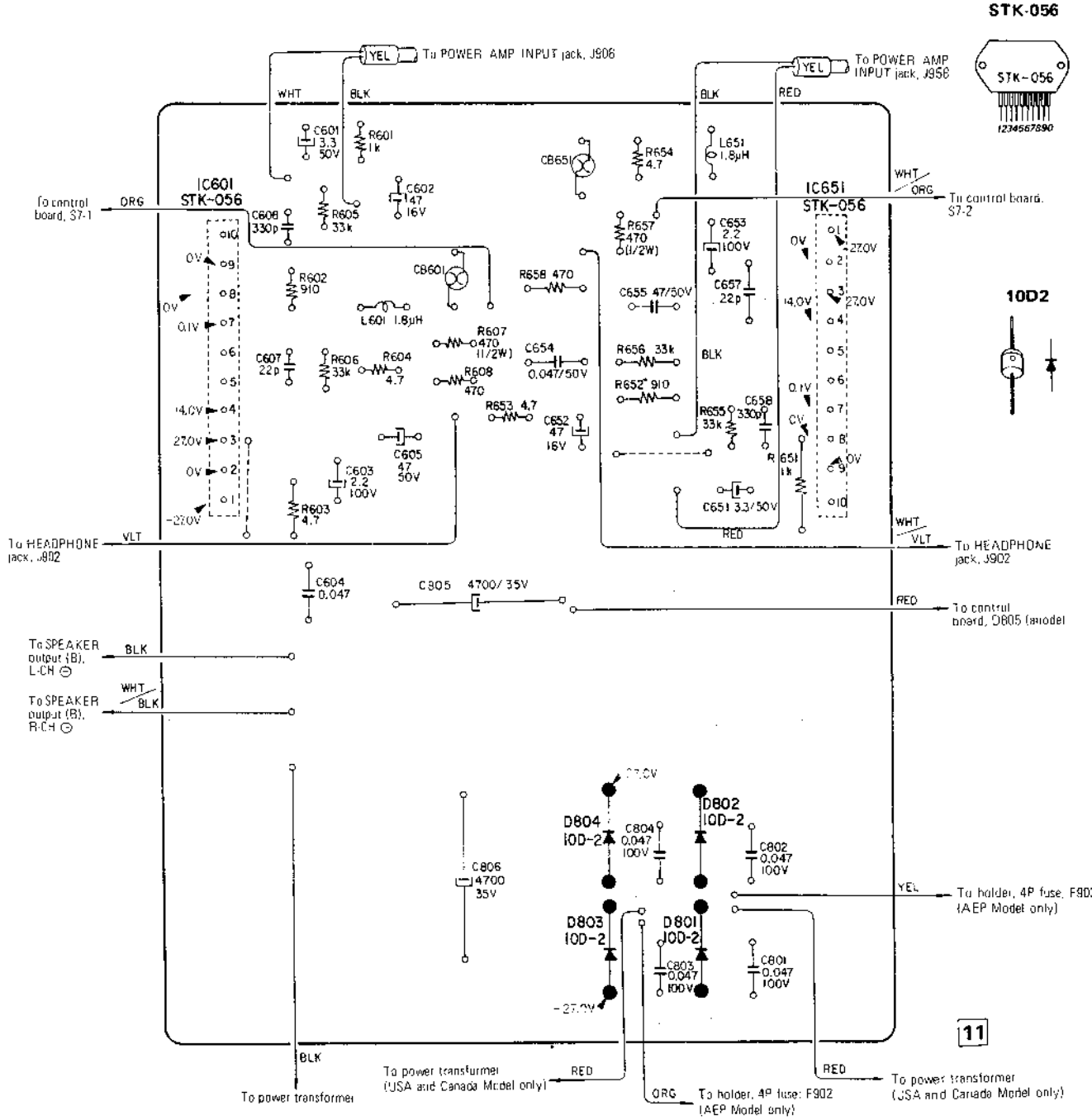


Parts Location

Q	Q801	Q802	Q803	Q503 Q504	Q554	Q506 Q556	Q505 Q555	Q553	Q552 Q502	Q561 Q501	Q805	Q804
D		D805										
ADJ											R550	

5-4. MOUNTING DIAGRAM – Power Amplifier Board –

– Conductor Side –

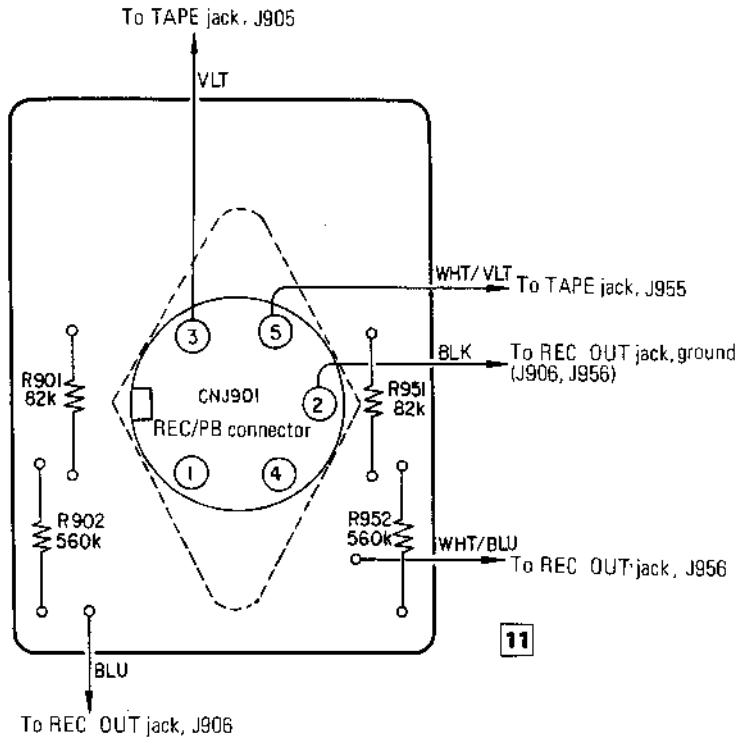


Semiconductor Location

IC601	D804 D803	D802 D801	IC651

5-5. MOUNTING DIAGRAM – REC/PB Connector Board –

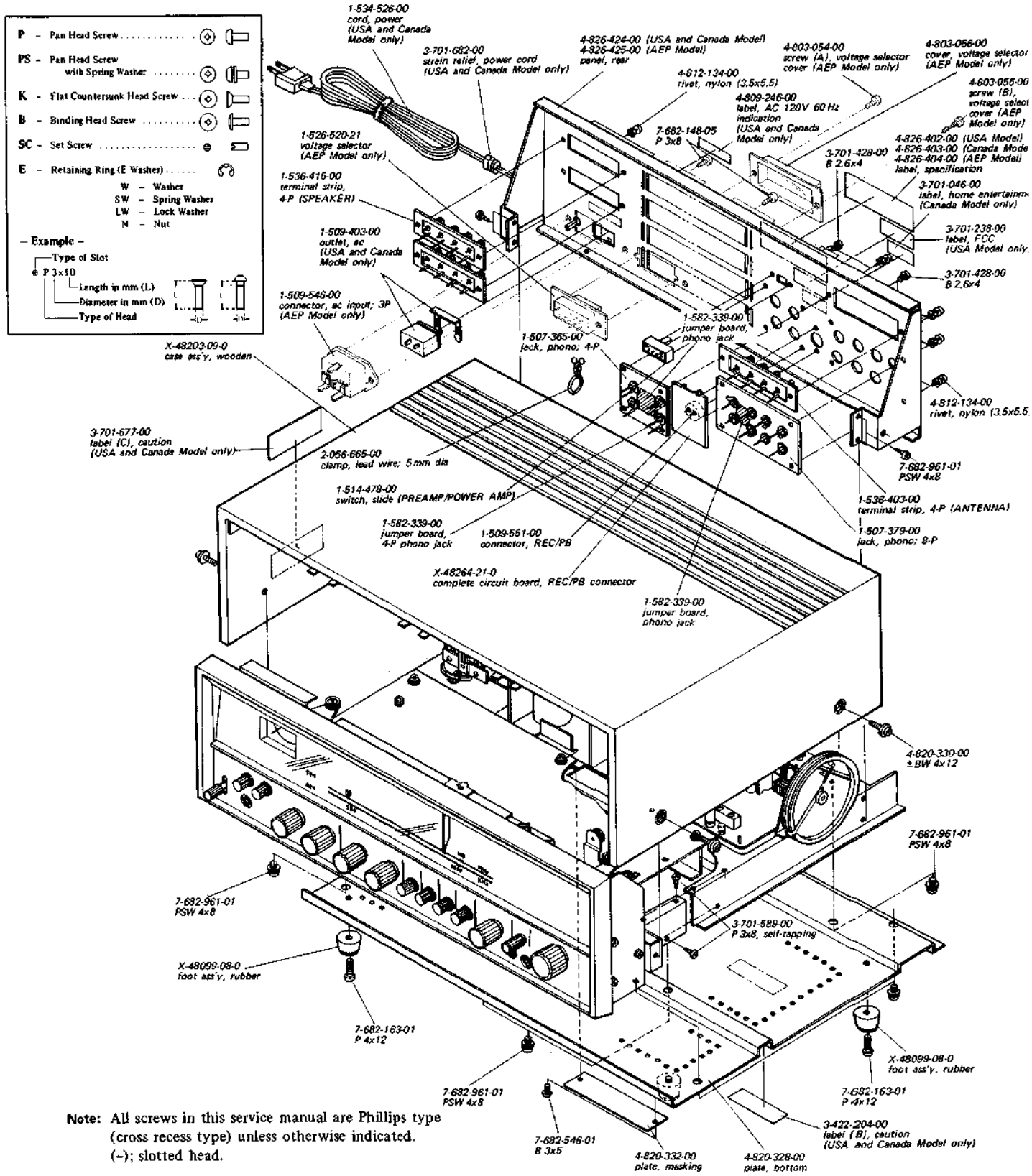
– Conductor Side –



SECTION 6
EXPLODED VIEWS

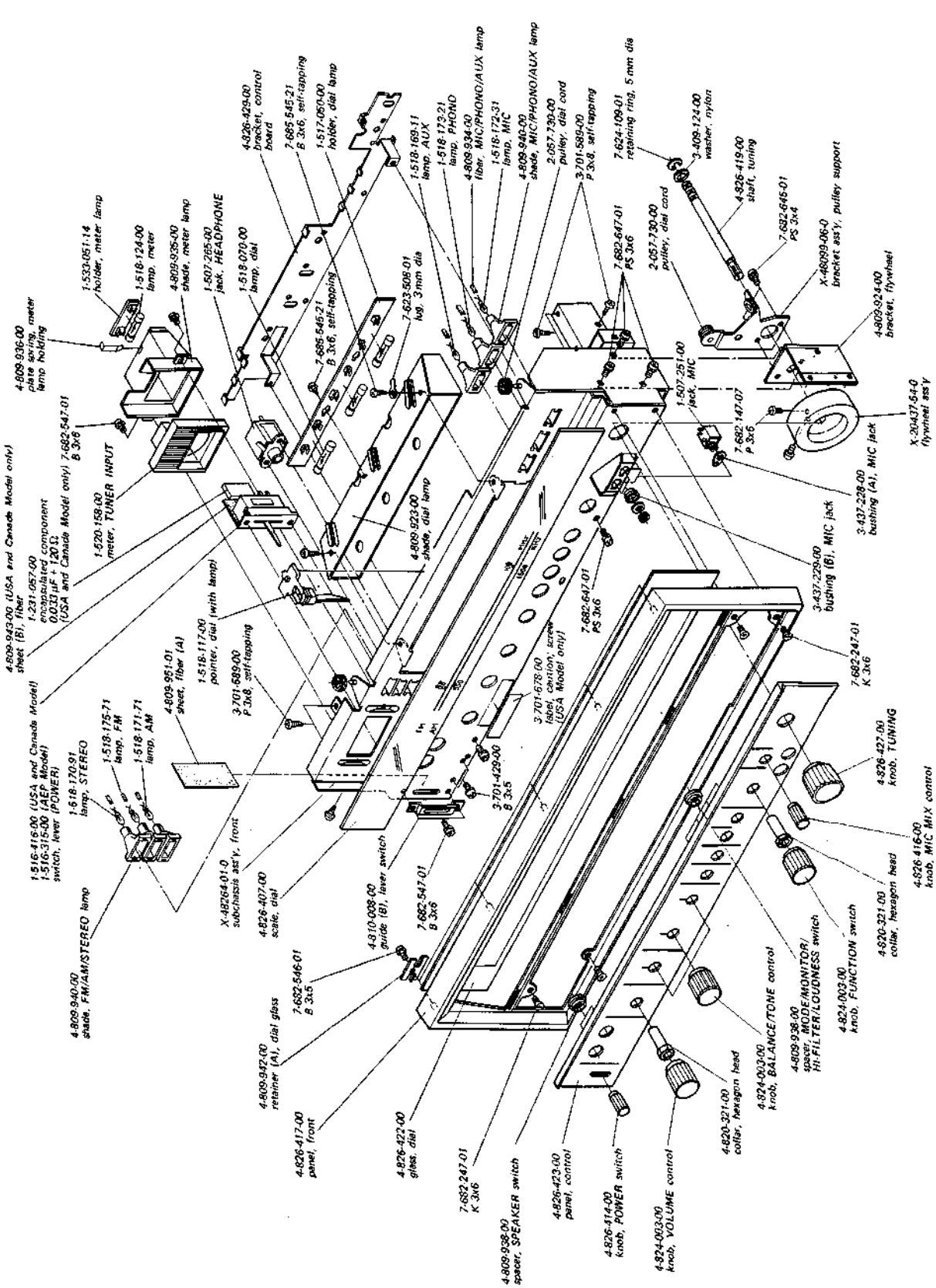
Note: Applicable serial number
USA Model: 800,001 and later
Canada Model: 700,001 and later
AEP Model: 500,001 and later

(1)

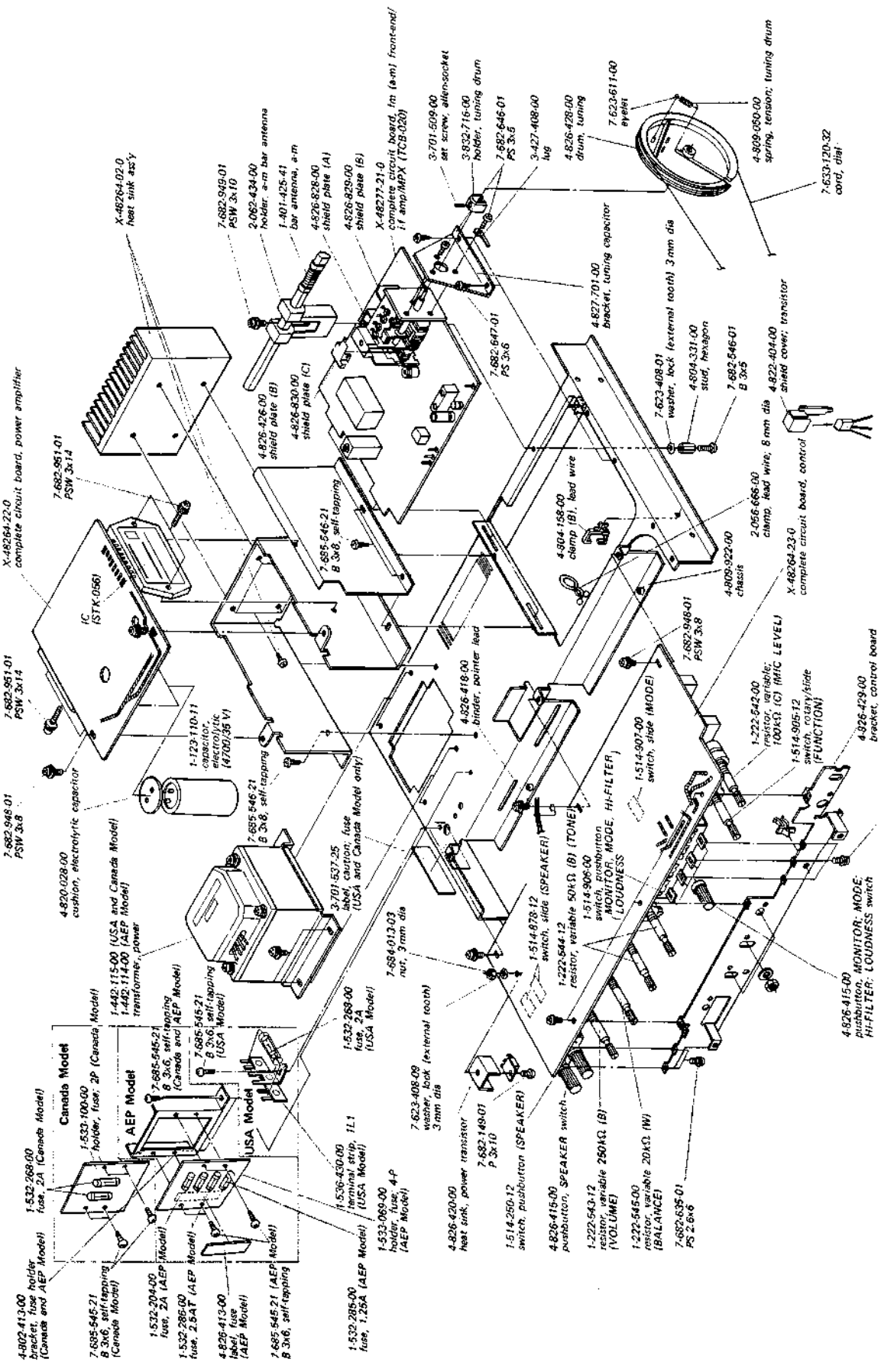


Note: All screws in this service manual are Phillips type (cross recess type) unless otherwise indicated.
(-); slotted head.

(2)


4-809-936-00 plate spring, meter lamp holding
1-533-051-14 holder, meter lamp
1-518-124-00 lamp, meter
4-809-936-00 shade, meter lamp
1-507-265-00 jack, HEADPHONE
4-826-429-00 bracket, control board
7-685-545-21 B 3x6, self-tapping
1-517-050-00 holder, dial lamp
1-518-169-11 lamp, AUX
1-518-173-21 lamp, PHONO
4-809-934-00 fiber, MIC/PHONO/AUX lamp
1-518-172-31 lamp, MIC
4-809-940-00 shade, MIC/PHONO/AUX lamp
2-057-730-00 pulley, dial cord
3-701-589-00 P 3x8, self-tapping
7-624-109-01 retaining ring, 5 mm dia
3-408-124-00 washer, nylon
4-826-419-00 shaft, tuning
7-682-645-01 PS 3x4
X-46099-06-0 bracket ass'y, pulley support
4-809-924-00 bracket, flywheel
X-20437-54-0 flywheel ass'y
7-682-647-01 PS 3x6
2-057-730-00 pulley, dial cord
1-507-251-00 jack, MIC
7-682-147-07 P 3x6
3-437-228-00 bushing (A), MIC jack
3-437-229-00 bushing (B), MIC jack
4-809-943-00 (USA and Canada Model only) sheet (B), fiber
1-231-057-00 encapsulated component 0.033 μF + 120 Ω (USA and Canada Model only)
7-682-547-01 B 3x6
1-520-158-00 meter, TUNER INPUT
4-809-923-00 shade, dial lamp
1-518-117-00 pointer, dial (with lamp)
3-701-589-00 P 3x8, self-tapping
4-809-951-01 sheet, fiber (A)
1-516-416-00 (USA and Canada Model) 1-516-315-00 (AEP Model) switch, lever (POWER)
1-518-170-91 lamp, STEREO
1-518-175-71 lamp, FM
1-518-171-71 lamp, AM
4-809-940-00 shade, FM/AM/STEREO lamp
X-48264-01-0 subchassis ass'y, front
4-826-407-00 scale, dial
4-810-038-00 guide (B), lever switch
7-682-546-01 B 3x5
7-682-547-01 B 3x6
3-701-429-00 B 3x5
3-701-678-00 label, caution, screw (USA Model only)
7-682-647-01 PS 3x6
7-682-247-01 K 3x6
4-826-427-00 knob, TUNING
4-826 416-00 knob, MIC MIX control
4-809-942-00 retainer (A), dial glass
4-826-417-00 panel, front
4-826-422-00 glass, dial
7-682 247-01 K 3x6
4-809-938-00 spacer, SPEAKER switch
4-826-423-00 panel, control
4-826-414-00 knob, POWER switch
4-824-003-00 knob, VOLUME control
4-820-321-00 collar, hexagon head
4-824-003-00 knob, BALANCE/TONE control
4-809-938-00 spacer, MODE/MONITOR/ HI-FILTER/LOUDNESS switch
4-824-003-00 knob, FUNCTION switch
4-820-321-00 collar, hexagon head

(3)


X-48264-22-0 complete circuit board, power amplifier
X-48264-02-0 heat sink ass'y
7-682-951-01 PSW 3x14
IC (STK-056)
4-820-028-00 cushion, electrolytic capacitor
1-123-110-11 capacitor, electrolytic (4700/35 V)
7-682-948-01 PSW 3x8
7-685-546-21 B 3x8, self-tapping
3-701-537-25 label, caution: fuse (USA and Canada Model only)
1-442-115-00 (USA and Canada Model) 1-442-114-00 (AEP Model) transformer, power
7-685-545-21 B 3x6, self-tapping (Canada and AEP Model)
7-685-545-21 B 3x6, self-tapping (USA Model)
1-532-268-00 fuse, 2A (USA Model)
7-684-012-03 nut, 3mm dia
7-623-408-09 washer, lock (external tooth) 3mm dia
1-533-069-00 holder, fuse, 4-P (AEP Model)
1-536-430-00 terminal strip, 1L1 (USA Model)
1-533-285-00 fuse, 1.25A (AEP Model)
4-826-420-00 heat sink, power transistor
7-682-149-01 P 3x10
1-514-250-12 switch, pushbutton (SPEAKER)
1-514-878-12 switch, slide (SPEAKER)
1-222-544-12 resistor, variable 50kΩ (B) (TONE)
1-514-906-00 switch, pushbutton (MONITOR, MODE, HI-FILTER, LOUDNESS)
4-826-415-00 pushbutton, SPEAKER switch
1-222-543-12 resistor, variable 250kΩ (B) (VOLUME)
1-222-545-00 resistor, variable 20kΩ (W) (BALANCE)
7-682-635-01 PS 2.6x6
4-826-426-00 shield plate (B)
4-826-830-00 shield plate (C)
7-682-949-01 PSW 3x16
2-062-434-00 holder, a-m bar antenna
1-401-425-41 bar antenna, a-m
4-826-826-00 shield plate (A)
4-826-829-00 shield plate (E)
X-48277-21-0 complete circuit board, fm (a-m) front-end/ i.f amp/MPX (TCB-020)
7-685-546-21 B 3x8, self-tapping
7-682-647-01 PS 3x6
3-701-509-00 str screw, allen-socket
3-832-716-00 holder, tuning drum
7-682-646-01 PS 3x5
3-427-408-00 lug
4-826-428-00 drum, tuning
7-623-611-00 eyelet
4-809-060-00 spring, tension; tuning drum
7-633-120-32 cord, dial
4-827-701-00 bracket, tuning capacitor
7-623-408-01 washer, lock (external tooth) 3 mm dia
4-804-331-00 stud, hexagon
7-682-546-01 B 3x5
4-822-404-00 shield cover, transistor
4-804-158-00 clamp (B), lead wire
2-056-666-00 clamp, lead wire; 8 mm dia
4-809-922-00 chassis
7-682-948-01 PSW 3x8
4-826-418-00 bridge, pointer lead
X-48264-23-0 complete circuit board, control
1-222-542-00 resistor, variable; 100kΩ (C) (MIC LEVEL)
1-514-905-12 switch, rotary/slide (FUNCTION)
4-826-439-00 bracket, control board
7-682-635-01 PS 2.6x6
4-826-415-00 pushbutton, MONITOR; MODE; HI-FILTER; LOUDNESS switch
Canada Model
AEP Model
USA Model
1-532-268-00 fuse, 2A (Canada Model)
1-533-100-00 holder, fuse, 2P (Canada Model)
7-685-545-21 B 3x6, self-tapping (Canada Model)
1-532-204-00 fuse, 2A (AEP Model)
1-532-286-00 fuse, 2.5AT (AEP Model)
4-826-413-00 label, fuse (AEP Model)
7-685-545-21 B 3x6, self-tapping (AEP Model)
4-802-413-00 bracket, fuse holder (Canada and AEP Model)

SECTION 7
ELECTRICAL PARTS LIST

Note: Applicable serial number
USA Model: 800,001 and later
Canada Model: 700,001 and later
AEP Model: 500,001 and later

COMPLETE CIRCUIT BOARDS

Ref. No.	Part No.	Description
	X-48277-21-0	fm (a-m) front-end/i-f amp/MPX (TCB-020)
	X-48264-21-0	rec/pb connector
	X-48264-22-0	power amplifier
	X-48264-23-0	control

SEMICONDUCTORS

Ref. No.	Part No.	Description
Q101		FET 2SK42
Q102		FET 2SK23A
Q103		transistor 2SC710
Q201		transistor 2SC403C
Q202		transistor 2SC403C
Q203		transistor 2SC403C
Q204		transistor 2SC403C
Q205		transistor 2SC403C
Q206		transistor 2SC710
Q301		transistor 2SC634A
Q302		transistor 2SC634A
Q303		transistor 2SC634A
Q304		transistor 2SC634A
Q401		transistor 2SC633A
Q402		transistor 2SC710
Q403		transistor 2SC710
Q404		transistor 2SC710
Q501(Q551)		transistor 2SC631A
Q502(Q552)		transistor 2SC632A
Q503(Q553)		transistor 2SC631A
Q504(Q554)		transistor 2SC632A
Q505(Q555)		transistor 2SC631A
Q506(Q556)		transistor 2SC632A
Q801		transistor 2SC1060
Q802		transistor 2SC632A
Q803		transistor 2SC632A
Q804		transistor 2SC634A
Q805		transistor 2SC634A
IC601(IC651)		IC STK-056
D201		diode 1T40
D202		diode 1T40
D203		diode 1T22A
D204		diode 1T22A
D301		diode 1T22A
D302		diode 1T22A
D303		diode 1T22A
D304		diode 1T22A
D305		diode 1T22A
D306		diode 1T22A
D307		diode 1T22A
D308		diode 1T22A
D309		diode 1T22A
D310		diode 1T40
D401		diode 1T22A
D402		diode 1T22A
D403		diode 1T40
D801		diode 10D-2
D802		diode 10D-2
D803		diode 10D-2
D804		diode 10D-2
D805		diode 10D-2

TRANSFORMERS, COILS AND INDUCTORS

Ref. No.	Part No.	Description
CFT401	1-403-150-00	CFT, 455 kHz
IFT101	1-403-914-00	IFT, 10.7 MHz
IFT201	1-403-291-00	transformer, discriminator
IFT401	1-403-149-00	IFT, 455 kHz
L101	1-401-541-00	coil, fm antenna
L102	1-405-599-00	coil, fm rf
L103	1-405-598-00	coil, fm osc
L301	1-407-418-00	coil, trap 22 mH
L302	1-425-683-00	transformer, switching
L303	1-407-177-00	inductor, micro 470 μH
L401	1-401-425-41	bar antenna, a-m
L402	1-405-444-00	coil, am osc
L403	1-407-169-00	inductor, micro 100 μH
L601(L651)	1-407-592-00	inductor, micro 1.8 μH
MU301	1-425-548-00	MPX unit
T901	1-442-115-00	transformer, power (USA and Canada Model)
	1-442-114-00	transformer, power (AEP Model)

CAPACITORS

All capacitors are in μF except as indicated with p (p means μμF) and $\pm^{80}_{20}$%, 50V, ceramic type unless otherwise specified. (elect = electrolytic)

Ref. No.	Part No.	Description			
C101	1-102-958-11	20p	±5%		
C102	1-102-959-11	22p	±5%		
C103	1-102-257-11	2200p			
C104	1-102-257-11	2200p			
C105	1-102-257-11	2200p			
C106	1-102-257-11	2200p			
C107	1-102-875-11	7p	±0.5p		
C108	1-101-973-11	20p	±5%		
C109	1-101-978-11	10p	±0.5p		
C110	1-102-257-11	2200p			
C111	1-102-872-11	5p	±0.5p		
C201	1-102-257-11	2200p			
C202	1-101-924-11	0.02		25V	
C203	1-101-924-11	0.02		25V	
C204	1-101-924-11	0.02		25V	
C205	1-102-257-11	2200p			
C206	1-101-924-11	0.02		25V	
C207	1-102-257-11	2200p			
C208	1-102-257-11	2200p			
C209	1-102-977-11	200p	±5%		
C210	1-102-947-11	10p	±5%		
C211	1-101-924-11	0.02		25V	
C212	1-121-352-11	47		10V	elect
C213	1-121-398-11	10		25V	elect
C214	1-101-924-11	0.02		25V	
C215	1-101-924-11	0.02		25V	
C216	1-121-402-11	33		10V	elect
C217	1-102-977-11	200p	±5%		
C218	1-101-924-11	0.02		25V	
C219	1-101-924-11	0.02		25V	
C220	1-121-398-11	10		25V	elect
C221	1-101-924-11	0.02		25V	
C301	1-107-140-11	240p	±10%	50V	silvered mica
C302	1-107-140-11	240p	±10%	50V	silvered mica
C303	1-121-398-11	10		25V	elect
C304		----------			
C305	1-102-977-11	200p	±5%		
C306		----------			
C307	1-127-021-11	0.33		10V	solid aluminum
C308	1-102-977-11	200p	±5%		
C309	1-121-391-11	1		50V	elect
C310	1-121-415-11	100		16V	elect
C311	1-127-022-11	0.47		10V	solid aluminum
C312	1-121-398-11	10		25V	elect
C313	1-103-575-11	4700p		50V	styrol
C314	1-105-661-12	0.001	±10%	50V	mylar
C315	1-101-340-11	120p	±10%		
C316	1-121-391-11	1		50V	elect
C317	1-105-679-12	0.033	±10%	50V	mylar
C318	1-105-679-12	0.033	±10%	50V	mylar
C319	1-105-677-12	0.022	±10%	50V	mylar
C320	1-105-677-12	0.022	±10%	50V	mylar
C321	1-127-021-11	0.33		10V	solid aluminum
C322	1-127-021-11	0.33		10V	solid aluminum
C323	1-105-661-12	0.001	±10%	50V	mylar
C401	1-105-669-12	0.0047	±10%	50V	mylar
C402	1-101-924-11	0.02		25V	
C403	1-105-682-12	0.056	±10%	50V	mylar
C404	1-101-924-11	0.02		25V	
C405	1-105-677-12	0.022	±10%	50V	mylar
C406	1-105-673-12	0.01	±10%	50V	mylar
C407	1-105-677-12	0.022	±10%	50V	mylar
C408	1-101-924-11	0.02		25V	
C409	1-101-924-11	0.02		25V	
C410	1-121-415-11	100		16V	elect
C411	1-101-924-11	0.02		25V	
C412	1-101-923-11	0.01		25V	
C413	1-105-685-12	0.1	±10%	50V	mylar
C414	1-101-924-11	0.02		25V	
C415	1-121-392-11	3.3		25V	elect
C416	1-121-392-11	3.3		25V	elect
C417	1-101-884-11	56p	±5%		
C418	1-101-924-11	0.02		25V	
C419	1-105-675-12	0.015	±10%	50V	mylar
C420	1-105-677-12	0.022	±10%	50V	mylar
C421	1-121-413-11	100		6.3V	elect
C422	1-127-022-11	0.47		10V	solid aluminum
C423	1-121-395-11	4.7		25V	elect
C424	1-101-924-11	0.02		25V	
C425	1-121-415-11	100		16V	elect
C501(C551)	1-121-914-11	3.3		50V	elect
C502(C552)	1-105-661-12	0.001	±10%	50V	mylar
C503(C553)		----------			
C504(C554)	1-102-112-11	330p	±10%		
C505(C555)	1-121-912-11	1		50V	elect
C506(C556)	1-121-415-11	100		16V	elect
C507(C557)	1-105-667-12	0.0033	±10%	50V	mylar
C508(C558)	1-105-673-12	0.01	±10%	50V	mylar
C509(C559)	1-105-673-12	0.01	±10%	50V	mylar
C510(C560)	1-102-816-11	120p	±5%		
C511(C561)	1-121-912-11	1		50V	elect
C512(C562)	1-121-912-11	1		50V	elect
C513(C563)	1-105-679-12	0.033	±10%	50V	mylar
C514(C564)	1-105-665-12	0.0022	±10%	50V	mylar

Ref. No.	Part No.	Description			
C515(C565)	1-105-679-12	0.033	±10%	50V	mylar
C516(C566)	1-121-912-11	1		50V	elect
C517(C567)	1-121-912-11	1		50V	elect
C518(C568)	1-121-413-11	100		6.3V	elect
C519(C569)	1-105-673-12	0.01	±10%	50V	mylar
C520(C570)	1-102-957-11	18p	±10%		
C521	1-121-413-11	100		6.3V	elect
C522(C572)	1-121-914-11	3.3		50V	elect
C523(C573)	1-105-661-12	0.001	±10%	50V	mylar
C524(C574)		----------			
C525(C575)	1-102-816-11	120p	±5%		
C526(C576)	1-121-912-11	1		50V	elect
C527(C577)	1-121-402-11	33		10V	elect
C528		----------			
C529	1-121-748-11	10		25V	elect
C530	1-121-748-11	10		25V	elect
C601(C651)	1-121-914-11	3.3		50V	elect
C602(C652)	1-121-409-11	47		16V	elect
C603(C653)	1-123-025-11	2.2		100V	elect
C604(C654)	1-105-681-12	0.047	±10%	50V	mylar
C605(C655)	1-123-058-11	47		50V	elect
C606(C656)		----------			
C607(C657)	1-102-959-11	22p	±5%		
C608(C658)	1-102-112-11	330p	±10%		
C801	1-105-881-12	0.047	±20%	100V	mylar
C802	1-105-881-12	0.047	±20%	100V	mylar
C803	1-105-881-12	0.047	±20%	100V	mylar
C804	1-105-881-12	0.047	±20%	100V	mylar
C805	1-123-110-11	4700		35V	elect
C806	1-123-110-11	4700		35V	elect
C807	1-121-936-11	220		25V	elect
C808	1-123-064-11	330		35V	elect
C809	1-123-064-11	330		35V	elect
C810	1-121-945-11	1000		35V	elect
C811	1-105-689-12	0.22	±10%	50V	mylar
C812	1-121-914-11	3.3		50V	elect
C813	1-121-914-11	3.3		50V	elect

CT101,102,103 CT401,402 CV101,102,103 CV401,402	1-151-263-00	capacitor, tuning

RESISTORS

All resistors are in Ω, ±5% ¼W and carbon type unless otherwise specified.

R101	1-244-673-11	1k
R102	1-244-685-11	3.3k
R103	1-244-657-11	220
R104	1-242-657-11	220
R105	1-244-679-11	1.8k
R106	1-244-705-11	22k
R107	1-242-651-11	120
R108	1-242-685-11	3.3k
R201	1-242-689-11	4.7k
R202	1-242-701-11	15k
R203	1-242-665-11	470
R204	1-242-625-11	10
R205	1-242-657-11	220
R206	1-242-673-11	1k
R207	1-244-643-11	56
R208	1-242-657-11	220
R209	1-244-690-11	5.1k
R210	1-244-695-11	8.2k
R211	1-242-669-11	680
R212	1-244-643-11	56
R213	1-244-673-11	1k
R214	1-242-657-11	220
R215	1-242-657-11	220
R216	1-244-705-11	22k
R217	1-244-673-11	1k
R218	1-242-667-11	560
R219	1-244-675-11	1.2k
R220	1-244-689-11	4.7k
R221	1-242-671-11	820
R222		----------
R223	1-244-643-11	56
R224	1-242-689-11	4.7k
R225	1-244-667-11	560
R226	1-242-673-11	1k
R227	1-244-695-11	8.2k
R228	1-244-705-11	22k
R229	1-242-680-11	2k
R230	1-242-643-11	56
R231	1-244-685-11	3.3k
R232	1-244-685-11	3.3k
R233	1-244-647-11	82
R234	1-244-657-11	220
R235	1-242-673-11	1k
R301	1-242-703-11	18k
R302	1-242-689-11	4.7k
R303	1-242-713-11	47k
R304	1-242-717-11	68k
R305	1-242-697-11	10k
R306	1-242-673-11	1k
R307	1-242-721-11	100k
R308	1-242-689-11	4.7k
R309	1-242-661-11	330