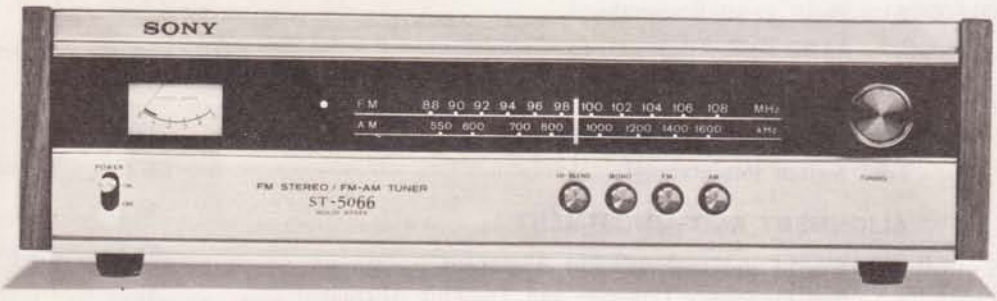
ST-5066

USA, Canada, AEP and UK Model



FM STEREO/FM-AM TUNER

SPECIFICATIONS

FM TUNER SECTION

Tuning range:	87.5 MHz to 108 MHz
Antenna:	300 ohms balanced 75 ohms unbalanced
Usable sensitivity:	2.2 μV (IHF) 1.7 μV (S/N = 30 dB)
S/N ratio:	68 dB
Frequency response:	30 Hz to 15 kHz $^{+1}_{-3}$ dB
Harmonic distortion:	Mono : 0.5% at 400 Hz 75 kHz deviation (100%) Mod. Stereo : 0.8% at 400 Hz 75 kHz deviation (100%) Mod.
Fm stereo separation:	Greater than 35 dB at 400 Hz

A-M TUNER SECTION

Tuning range:	530 kHz to 1,605 kHz
Antenna:	Built-in bar antenna with external antenna provision
Sensitivity:	48 dB/m, built-in antenna 100 μV, external antenna
S/N ratio:	50 dB at 50 mV/m
Harmonic distortion:	0.6 %

GENERAL

Power requirements:	120 volts, 60 Hz ac (USA and Canada Model) 110, 127, 220, 240 volts, 50/60 Hz ac (AEP and UK Model)
Power consumption:	23 watts
Dimensions:	410 (w) x 120 (h) x 284 (d) mm $16\frac{1}{8}$ (w) x $4\frac{11}{16}$ (h) x $11\frac{3}{16}$ (d) inches
Net weight:	4.8 kg (10 lb 9 oz)

SONY®

SERVICE MANUAL

ST-5066

TABLE OF CONTENTS

SECTION 1
TECHNICAL DESCRIPTION

1-1. SPECIFICATIONS

Fm Tuner Section

Tuning range:	87.5 to 108 MHz
Antenna:	300 ohms balanced 75 ohms unbalanced
Intermediate frequency:	10.7 MHz
Usable sensitivity:	2.2 μV (IHF) 1.7 μV (S/N = 30 dB)
S/N ratio:	68 dB
Capture ratio:	1.5 dB
Selectivity:	55 dB
Image rejection:	45 dB
I-f rejection:	95 dB
Spurious rejection:	75 dB
A-m suppression:	45 dB
Frequency response:	30 Hz to 15 kHz $\pm \frac{1}{3}$ dB
Harmonic distortion:	Mono: 0.5 % at 400 Hz 75 kHz deviation (100 %) Mod. Stereo: 0.8 % at 400 Hz 75 kHz deviation (100 %) Mod.
Fm stereo separation:	Greater than 35 dB at 400 Hz
19 kHz, 38 kHz suppression:	40 dB

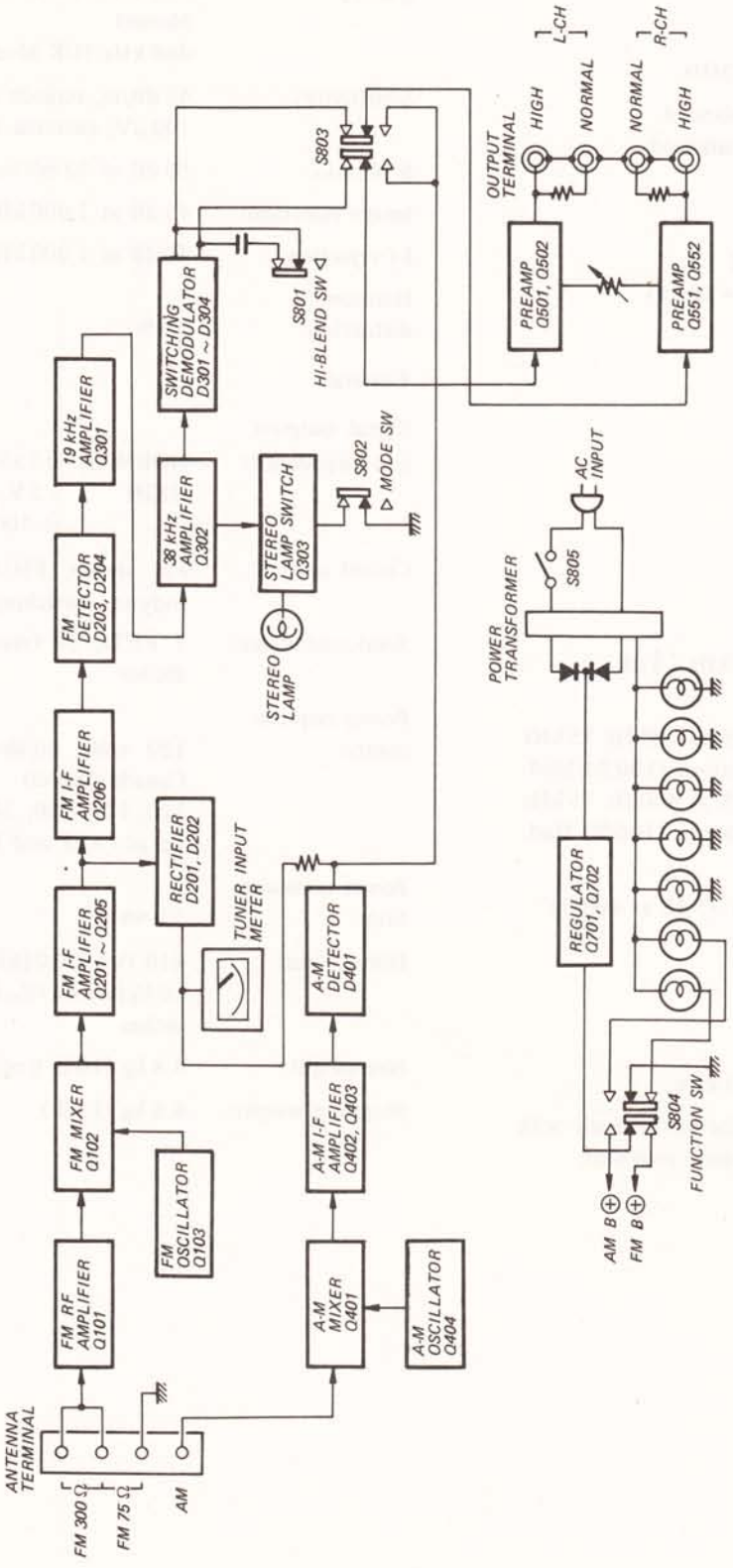
A-m Tuner Section

Tuning range:	530 to 1,605 kHz
Antenna:	Built-in ferrite bar antenna with external antenna provision
Intermediate frequency:	455 kHz (USA, Canada and AEP Model) 468 kHz (UK Model)
Sensitivity:	48 dB/m, built-in antenna 100 μV, external antenna
S/N ratio:	50 dB at 50 mV/m
Image rejection:	45 dB at 1,000 kHz
I-f rejection:	40 dB at 1,000 kHz
Harmonic distortion:	0.6 %

General

Signal outputs and impedance:	NORMAL 0.75 V, 4.5 kΩ HIGH 1.5 V, 3.3 kΩ at 400 Hz, 100 % Mod.
Circuit system:	FM stereo, FM/AM superheterodyne, switching MPX
Semiconductors:	2 FETs, 20 transistors and 14 diodes
Power requirements:	120 volts, 60 Hz ac (USA and Canada Model) 110, 127, 220, 240 volts, 50/60 Hz ac (AEP and UK Model)
Power consumption:	23 watts
Dimensions:	410 (w) x 120 (h) x 284 (d) mm 16 1/8 (w) x 4 11/16 (h) x 11 3/16 (d) inches
Net weight:	4.8 kg (10 lb 9 oz)
Shipping weight:	6.8 kg (15 lb)

1-2. BLOCK DIAGRAM



SECTION 2
DISASSEMBLY AND REPLACEMENT

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

2-1. FRONT PANEL REMOVAL

1. Remove the two screws at both sides of the wooden case. This frees the wooden case.
2. Remove the TUNING knob by pulling it straight off.
3. Remove the two screws from the bottom plate and one screw at both sides of the front subchassis as shown in Fig. 2-1 and 2-2. This frees the front panel.

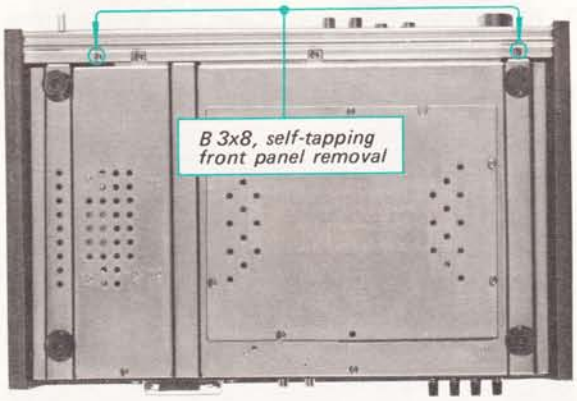


Fig. 2-1. Front panel removal (bottom view)

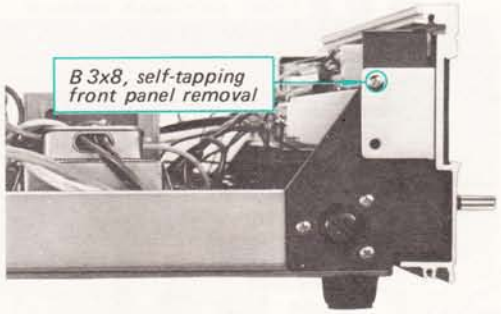


Fig. 2-2. Front panel removal (side view)

2-2. LAMP REMOVAL

Dial Lamp

1. Remove the screw shown in Fig. 2-3. This frees the dial lamp holder.
2. Remove the lamp from the holder.

Meter Lamp

1. Straighten the flat spring, then pull it up as shown in Fig. 2-4. This frees the meter lamp holder.
2. Remove the lamp from the holder.

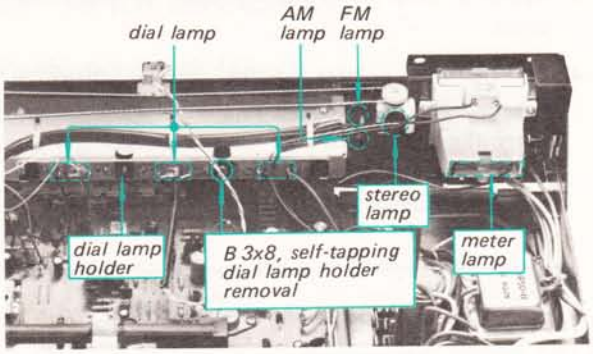


Fig. 2-3. Dial lamp replacement

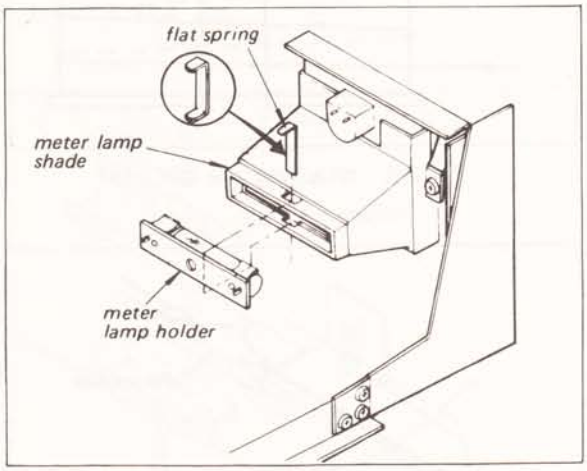


Fig. 2-4. Meter lamp removal

2-3. DIAL CORD STRINGING

Preparation

1. Cut a 1250 mm (51-inch) length of 0.5 mm (1/64-inch) diameter dial cord.
2. Tie the end of the cord to a spring as shown in Fig. 2-5.
3. Rotate the tuning drum fully clockwise (maximum capacitance position).
4. Hook the spring to the tuning drum as shown in Fig. 2-5.

Procedure

1. Referring to Fig. 2-5, proceed the stringing in numerical order as shown.

   Note: Refer to the Fig. 2-6, for wrapping the cord around the drum.
   At the finish point of stringing, tighten the cord so that the spring is under tension, and squeeze the eyelet.

2. After completing the dial cord stringing, make sure that the tuning system works properly.

3. Apply a drop of contact cement to the finish point.
4. Put the dial pointer on the cord as shown in Fig. 2-7, and tune the set to the local fm station. Move the dial pointer to the position where the dial indication coincides with the local station carrier frequency.

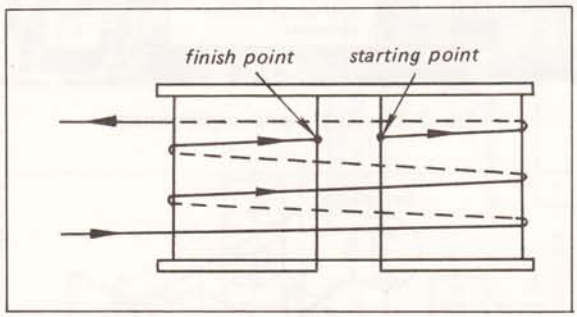


Fig 2-6. Wrapping the dial cord

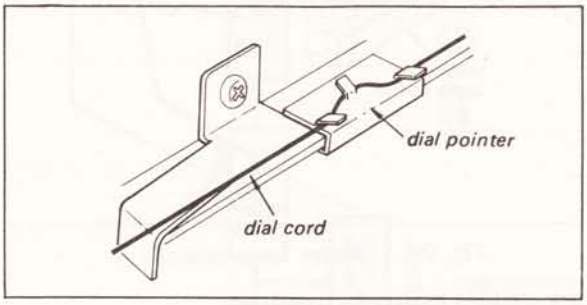


Fig 2-7. Dial pointer installation

2-4. FRONT SUBCHASSIS REMOVAL

Preparation

1. Fix the dial cord to the drum and the five pulleys by using a cellophane tape.
2. Remove the tuning drum by removing the set screw.
3. Remove the front panel as described in Procedure 2-1.

Procedure

1. Remove the two screws from the front bottom of the chassis as shown in Fig. 2-8.
2. Remove the three screws at both sides of the chassis as shown in Fig. 2-9.
3. Remove the two screws shown in Fig. 2-10. This frees the front subchassis with dial cord.

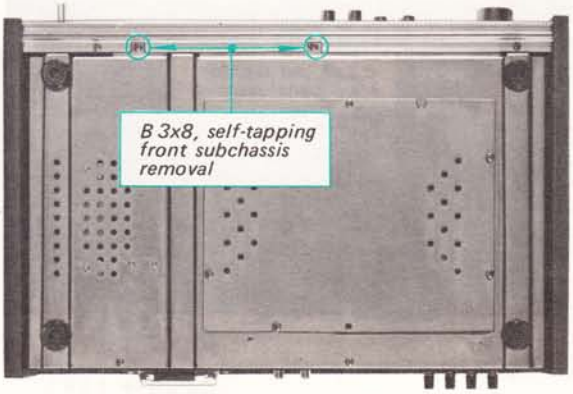


Fig. 2-8. Front subchassis removal (Bottom view)

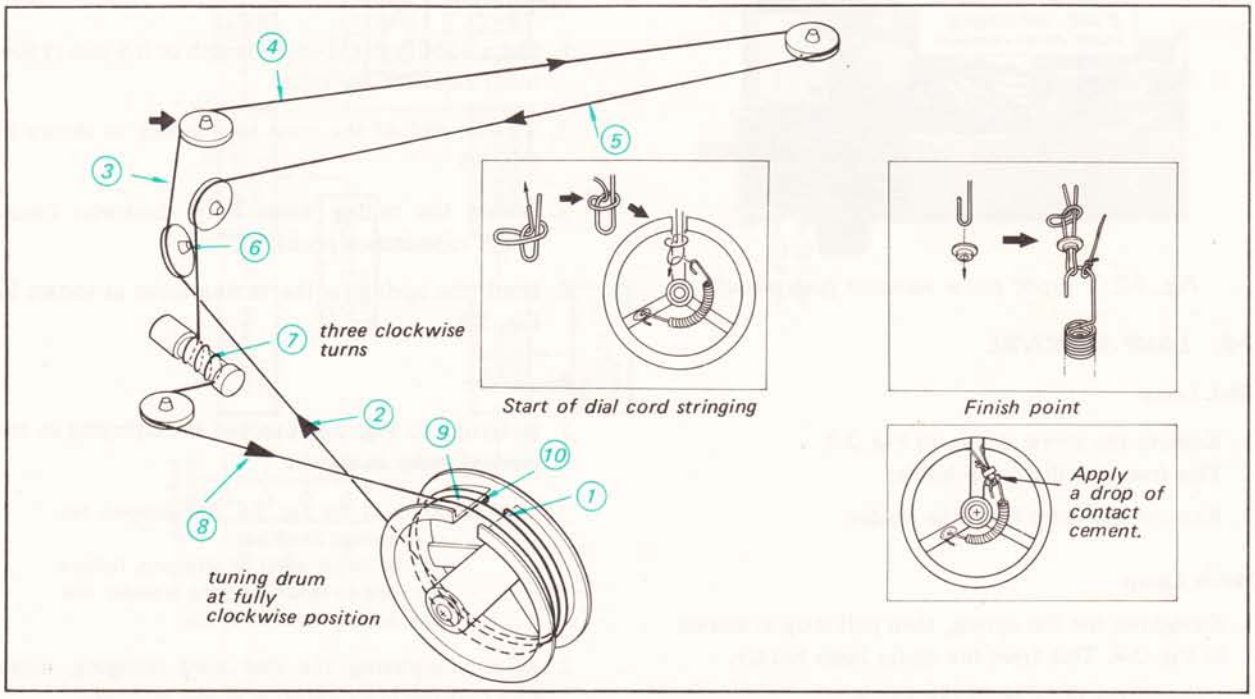


Fig. 2-5. Dial cord stringing

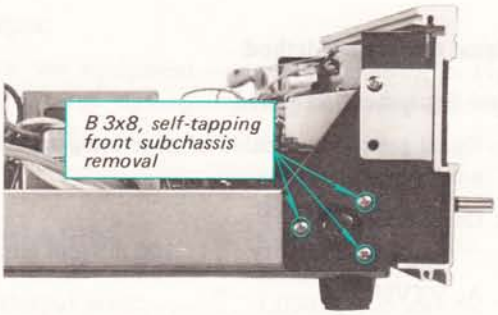


Fig. 2-9. Front subchassis removal (Side view)

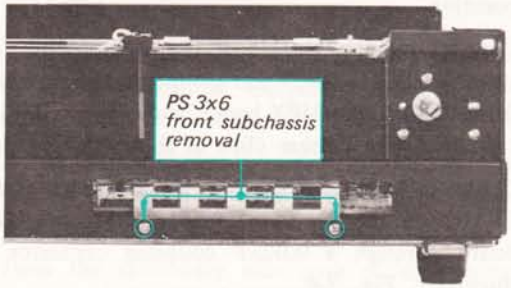


Fig. 2-10. Front subchassis removal

2-5. PRINTED CIRCUIT BOARD REMOVAL

1. Remove the front subchassis as described in Procedure 2-4.
2. Remove the four screws shown in Fig. 2-11. This frees the printed circuit board.

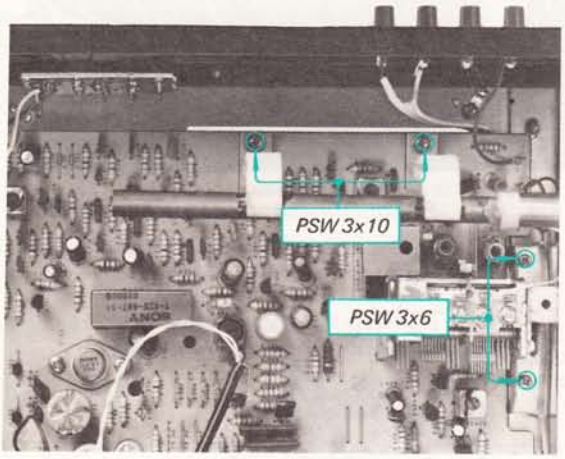


Fig. 2-11. Printed circuit board removal

2-6. SWITCH REPLACEMENT

Pushbutton Switch (4-key)

1. Remove the printed circuit board as described in Procedure 2-5.
2. Remove the switch bracket by removing the two screws (P 2.6 x 4) shown in Fig. 2-12.
3. Remove the screw (P 2.6 x 14) from the bottom as shown in Fig. 2-12.
4. With a soldering iron having a solder sucking tip, clean the solder from each lug of the switch.
5. Install a new one.

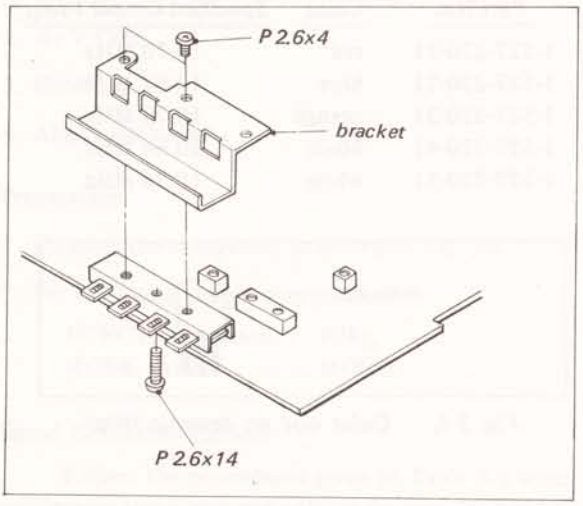


Fig. 2-12. 4-key pushbutton switch replacement

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

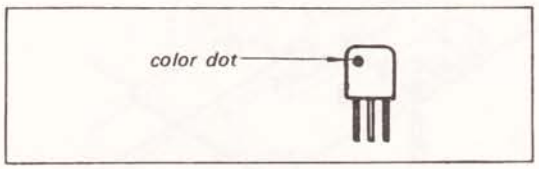


Fig. 3-1. Color dot on ceramic filter

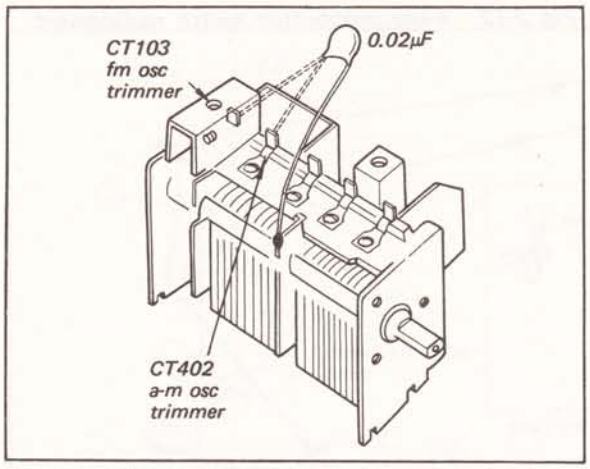


Fig. 3-2. Interruption of fm or a-m local oscillator operation

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 R227 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.

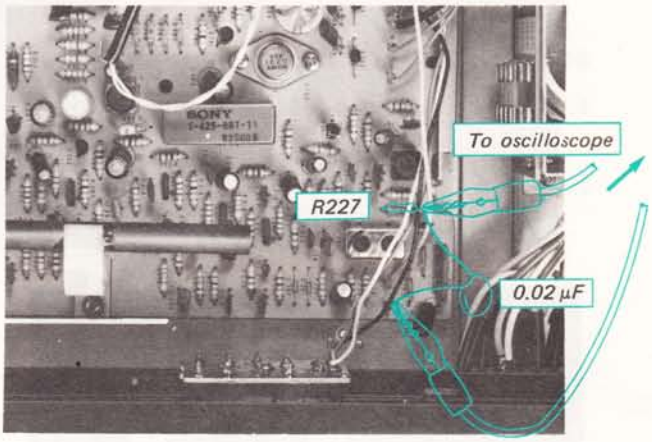


Fig. 3-3. Fm discriminator output connection

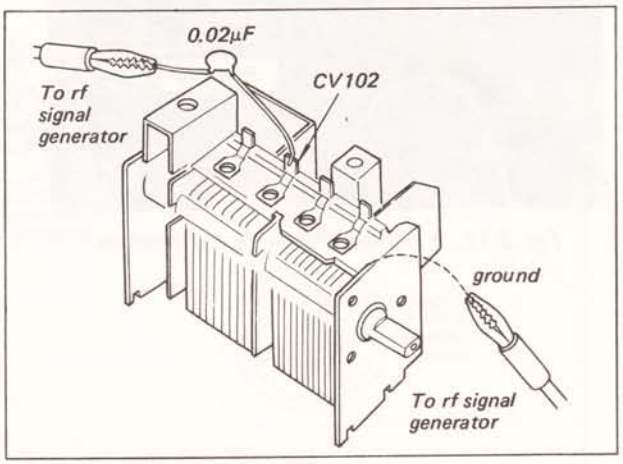


Fig. 3-4. 10.7MHz signal injection

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 tuner switches as follows:

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

3. Adjust the signal generator frequency slightly to obtain a maximum output, 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 secondary side core of discriminator transformer IFT201 (see Fig. 3-10) to obtain a minimum indication on the oscilloscope with an alignment tool as shown in Fig. 3-6.

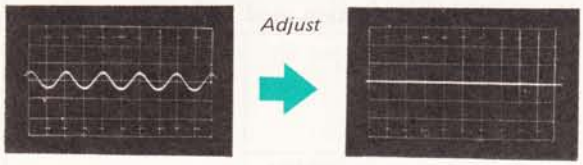


Fig. 3-6. Fm discriminator alignment output response

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 primary side core of discriminator transformer IFT201 (see Fig. 3-10) 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 tuner switches as follows:

   FUNCTION switch . . FM
   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.

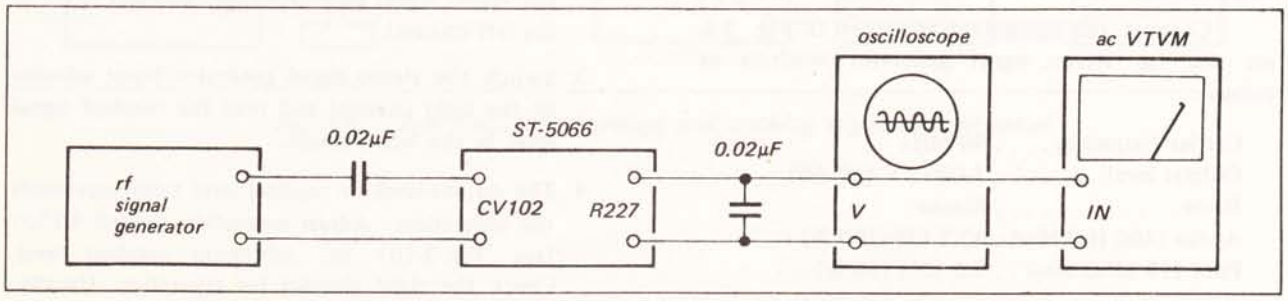


Fig. 3-5. Fm i-f and discriminator alignment test setup by rf signal generator

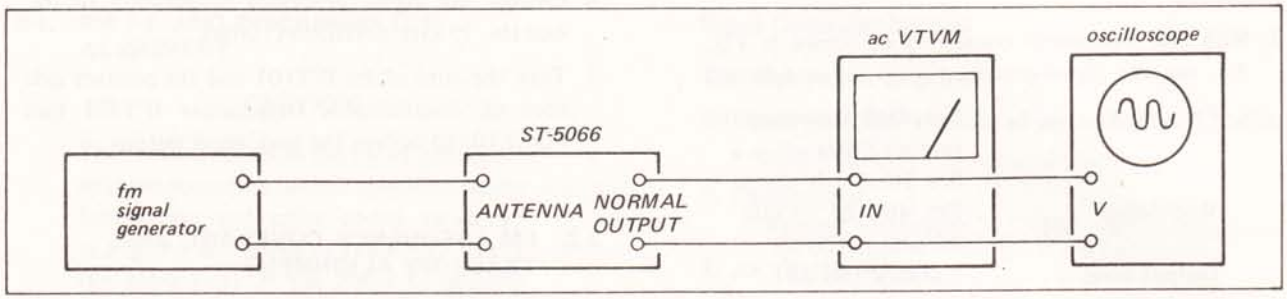


Fig. 3-7. Fm frequency coverage and tracking alignment test setup

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**	**Dial Setting**	**Ac VTVM Connection**	**Adjust**	**Indication**
1	87.5 MHz	lowest position	NORMAL OUTPUT	OSC coil L103 See Fig. 3-10.	Maximum VTVM reading
2	108 MHz	108 MHz		OSC trimmer CT103 See Fig. 3-10.	
	TRACKING ALIGNMENT		**SG Coupling ..... Direct SG Output Level ..... 400 Hz, 75 kHz Deviation mod; as low as possible**		
1	87.5 MHz	Tune to the SG signal	NORMAL OUTPUT	Antenna coil L101 RF coil L102 See Fig. 3-10.	Maximum VTVM reading
2	108 MHz			Antenna trimmer CT101 RF trimmer CT102 See Fig. 3-10.	

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, 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 tuner to the carrier frequency of stereo signal generator, then turn the top core of switching transformer L301 (see Fig. 3-10) 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. 3-10) 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

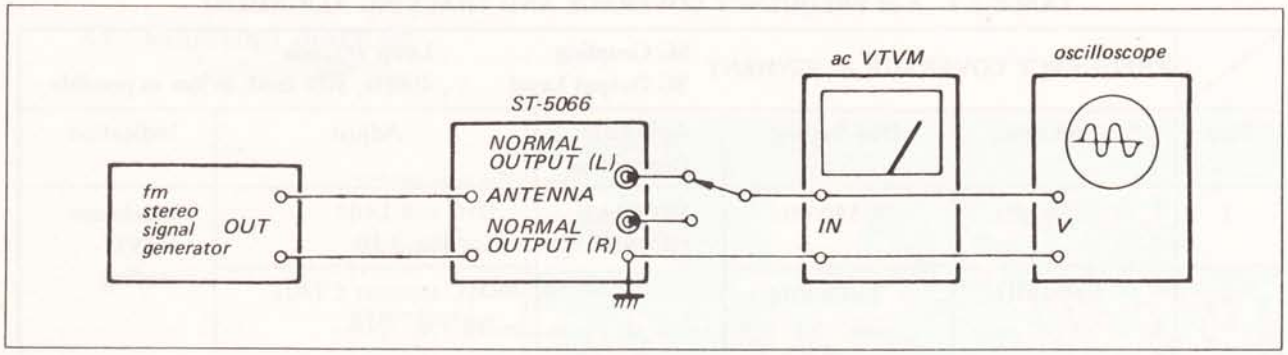


Fig. 3-8. Fm stereo separation adjustment test setup

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

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. 3-9, 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 the alignment, be sure that the dial is mechanically calibrated.

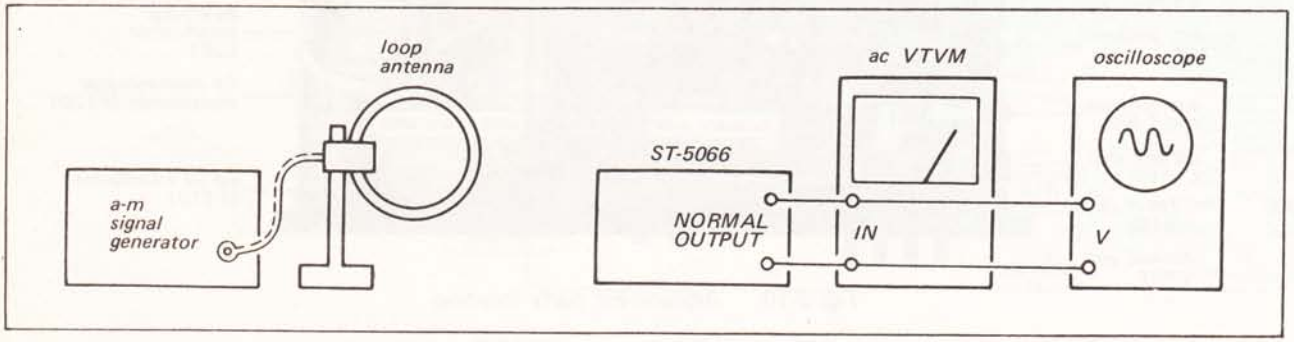


Fig. 3-9. A-m frequency coverage and tracking alignment test setup

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	Dial Setting	Ac VTVM Connection	Adjust	Indication
1	550 kHz	550 kHz	NORMAL OUTPUT	OSC coil L403 See Fig. 3-10.	Maximum VTVM reading
2	1,600 kHz	1,600 kHz		OSC trimmer CT402 See Fig. 3-10.	
	TRACKING ALIGNMENT		**SG Coupling ..... Loop antenna SG Output Level ... 400Hz, 30% mod; as low as possible**		
1	600 kHz	Tune to the SG signal.	NORMAL OUTPUT	Position of bar antenna L402. See Fig. 3-10.	Maximum VTVM reading
2	1,400 kHz			Antenna trimmer CT401 See Fig. 3-10.	

Adjustment Parts Location:

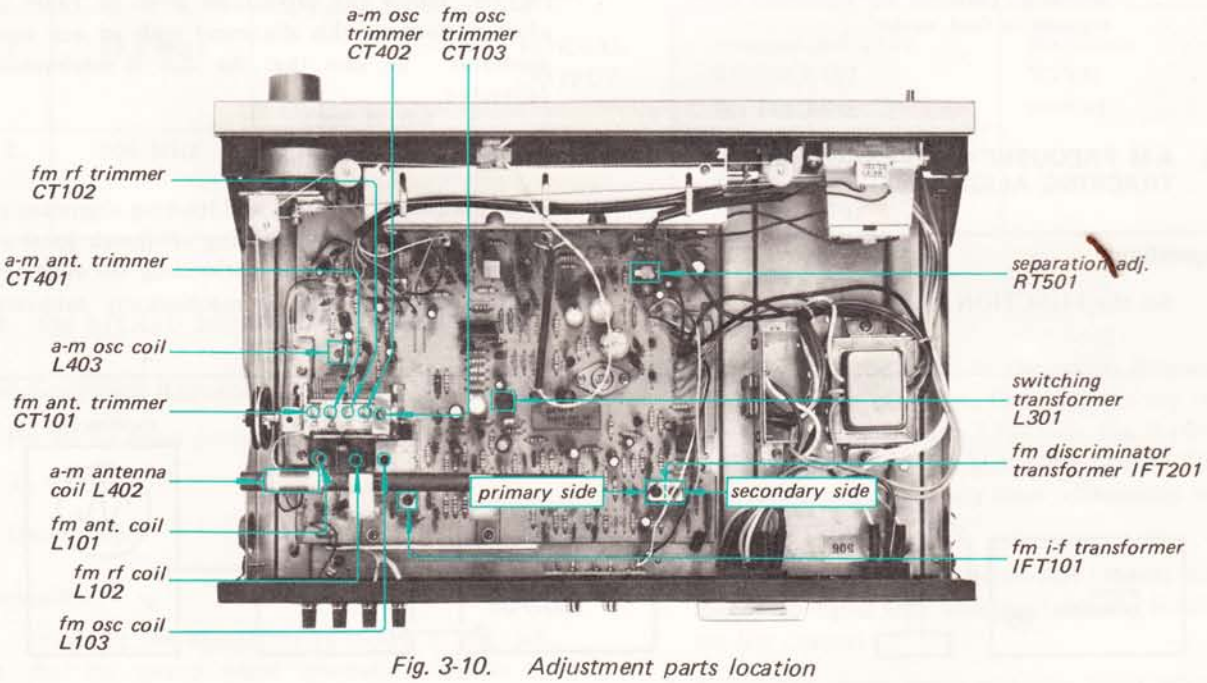


Fig. 3-10. Adjustment parts location

SECTION 4
REPACKING

The ST-5066's original shipping carton and packing materials are the ideal containers for shipping the unit. However to secure the maximum protection, the ST-5066 must be repacked in these materials precisely as before. The proper repacking procedures are shown in Fig. 4-1.

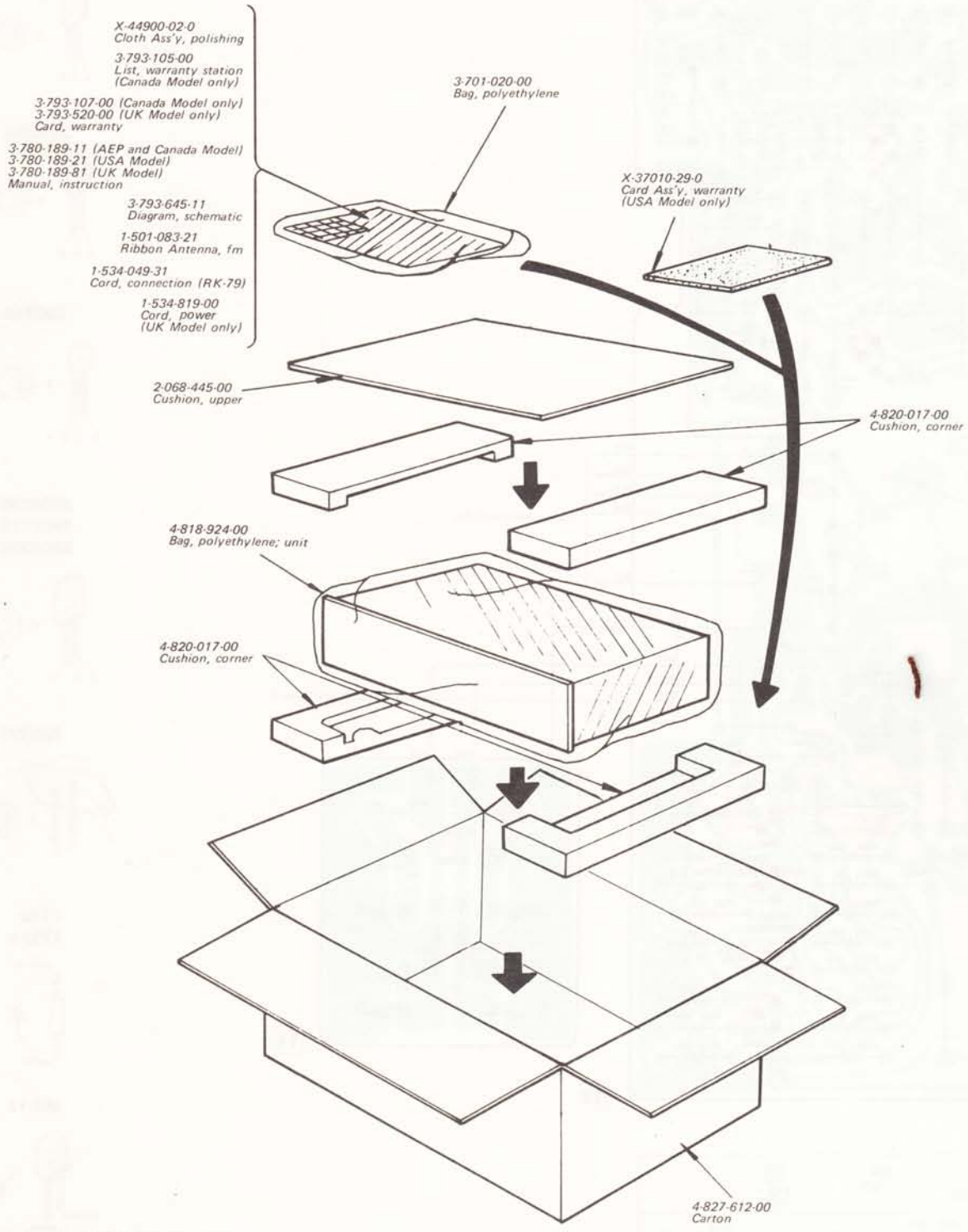


Fig. 4-1. Repacking

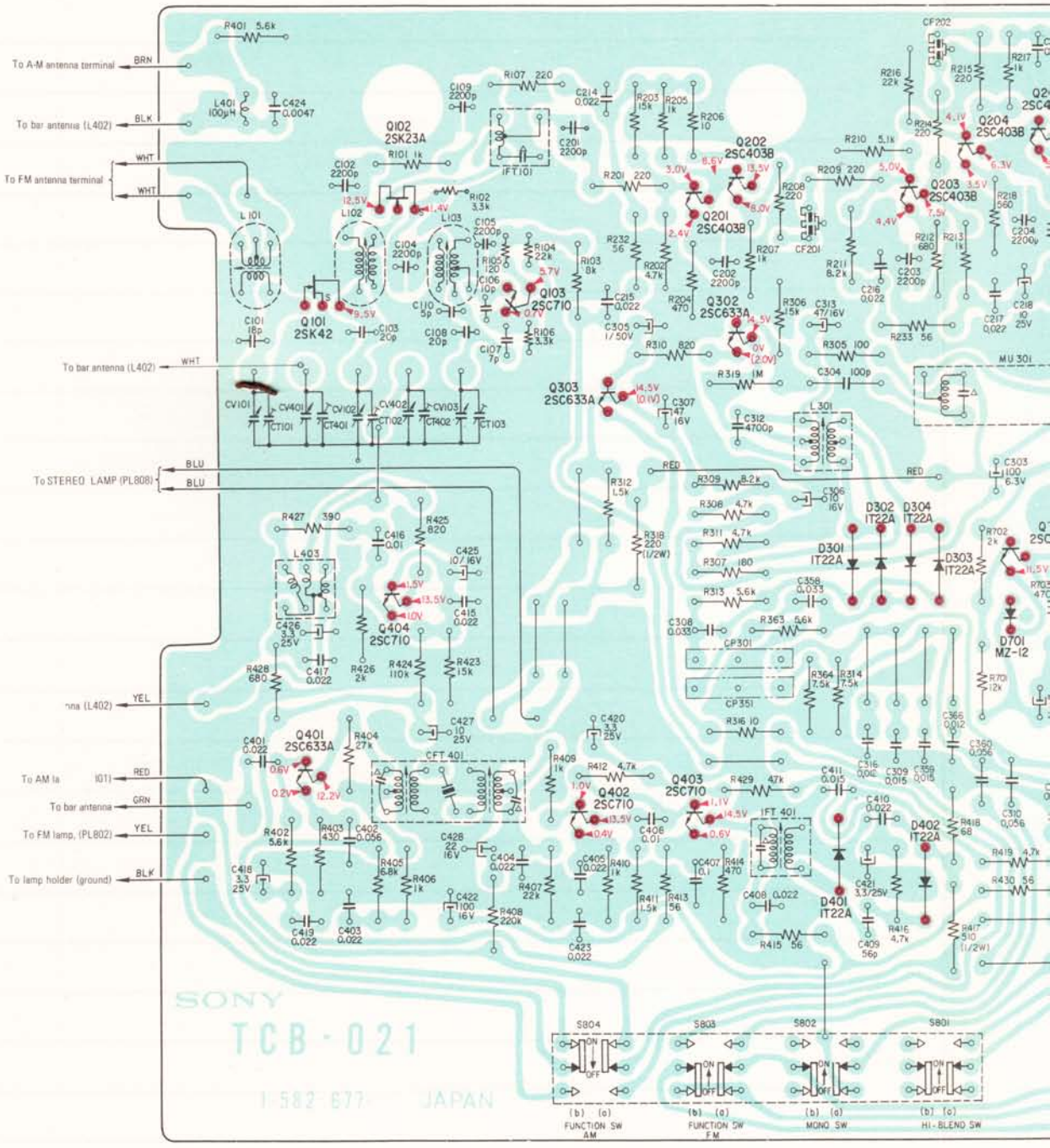
Note: Applicable Serial Numbers:
USA Model (Serial No. 800,001 and later)
Canada Model (Serial No. 700,001 and later)
UK Model (Serial No. 600,001 and later)
AEP Model (Serial No. 500,001 and later)

MEMO

SECTION 5
DIAGRAMS

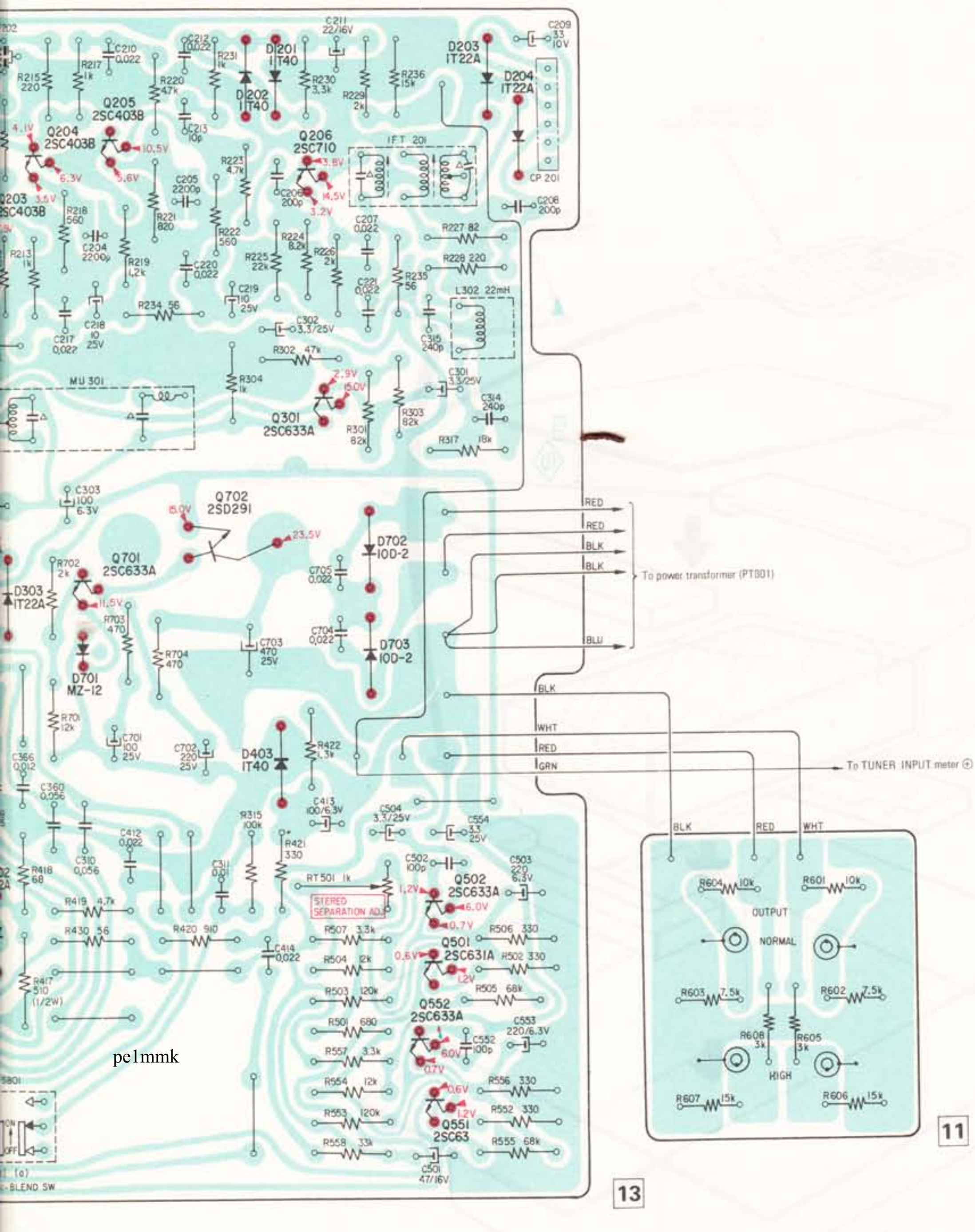
5-1. MOUNTING DIAGRAM

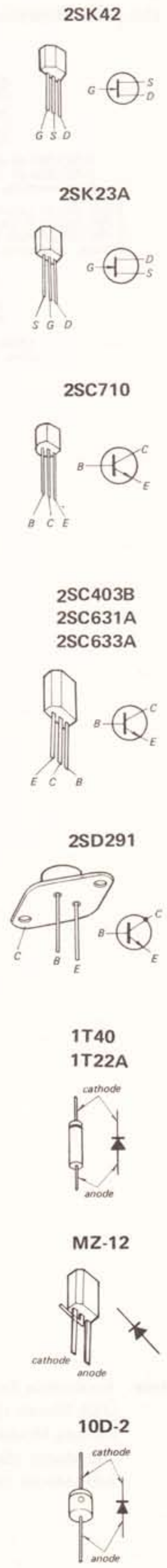
– Conductor side –



Parts Location

Q	101 102 103 201 202 203 204 701 401 404 402 403 302
D	301 302 304 303 701 401 402
ADJ	L101 L102 L103 IFT101 CT101 CT401 CT102 CT402 CT103 L403 L301

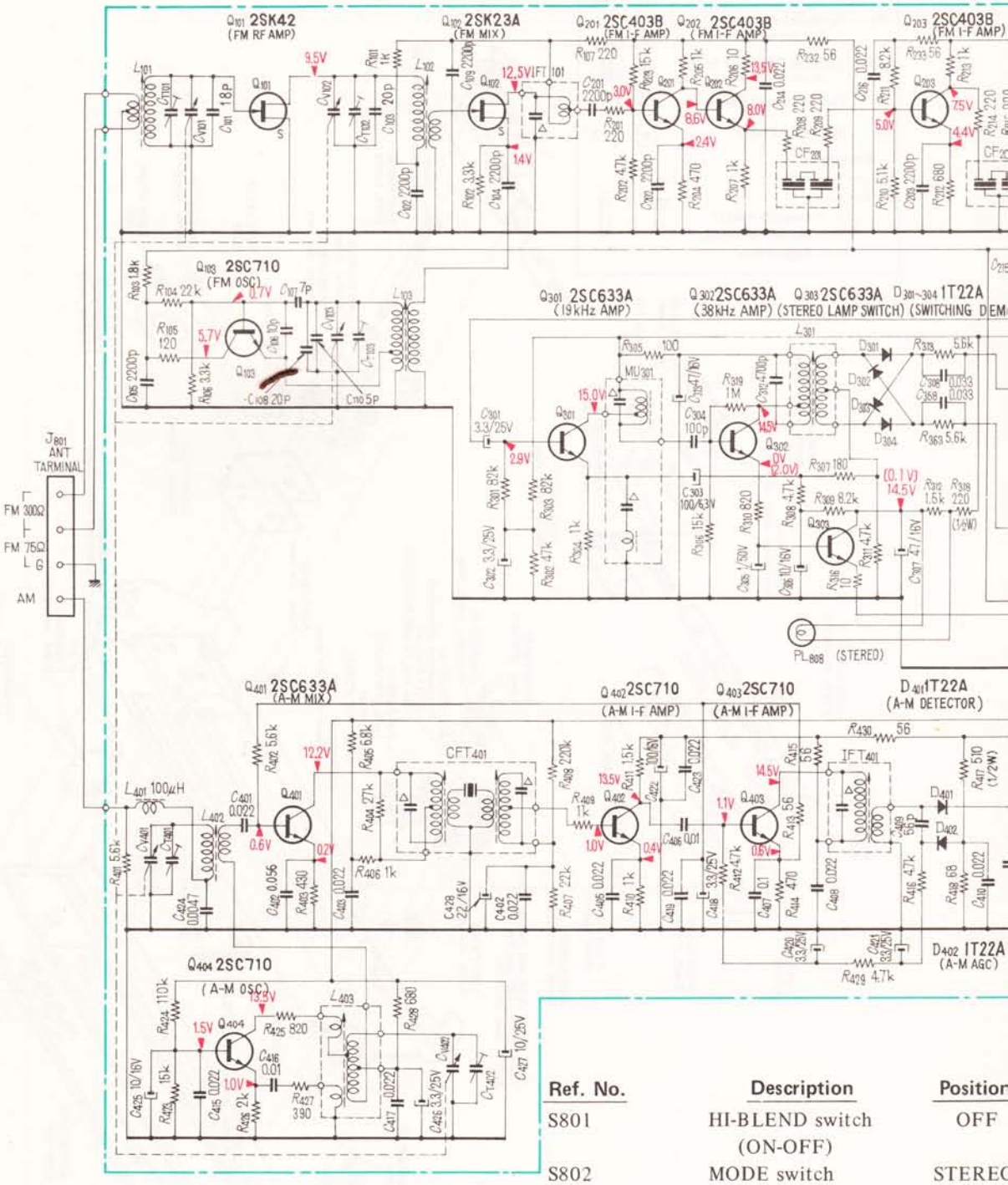




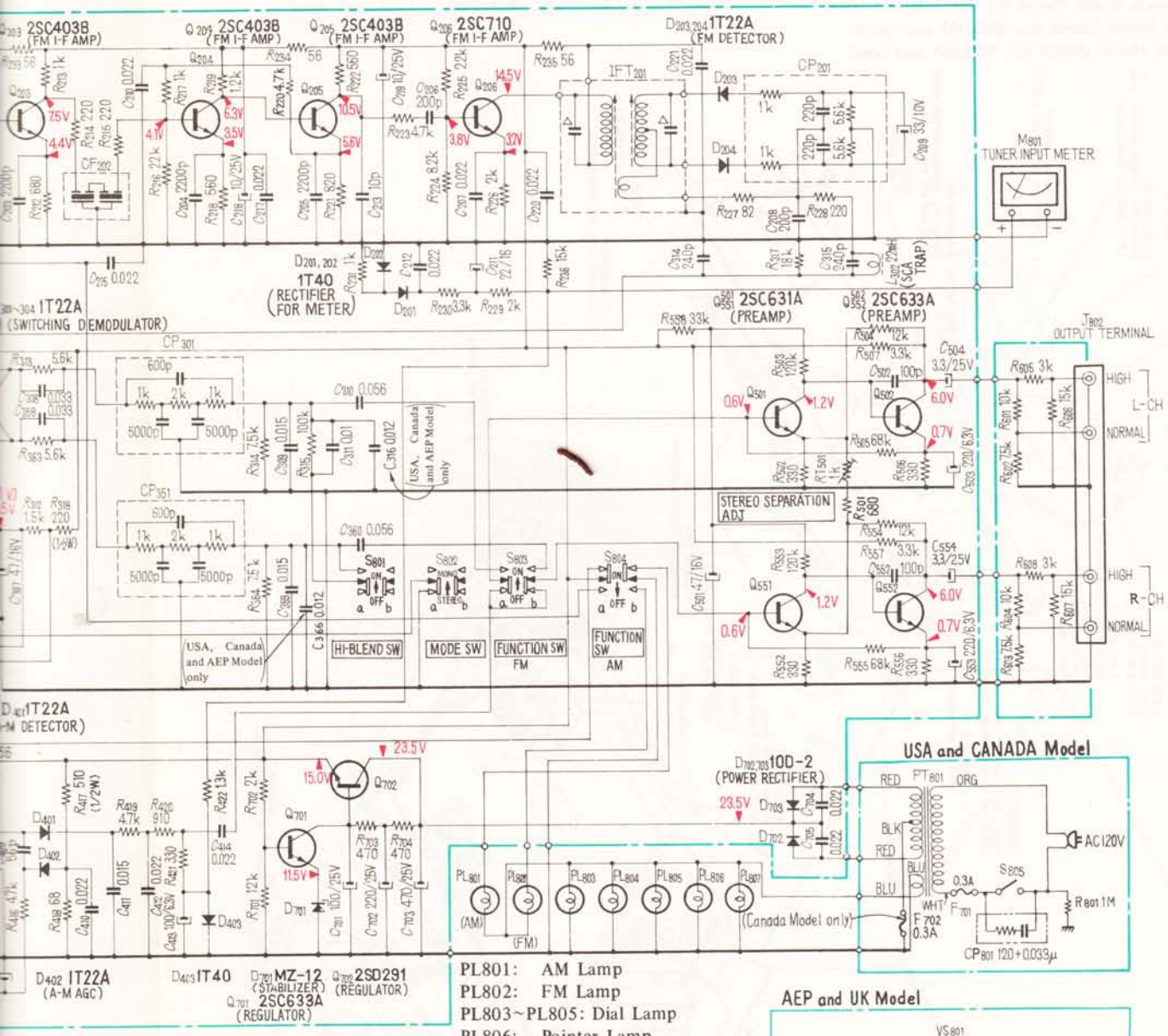
204	205	701	702	206	301	502 501 552 551	
303	701	202 201	403	702 703	203	204	
RT501	IFT201						

Note: Capacitors marked △ are built in transformers.
[ ]: stereo operation

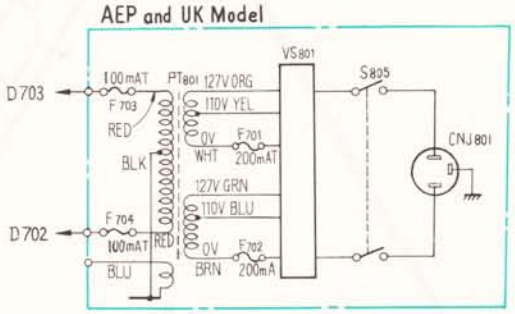
5-2. SCHEMATIC DIAGRAM



Ref. No.	Description	Position
S801	HI-BLEND switch (ON-OFF)	OFF
S802	MODE switch (MONO-STEREO)	STEREO
S803	FUNCTION switch (FM)	OFF
S804	FUNCTION switch (AM)	ON
S805	POWER switch (ON-OFF)	OFF



PL801: AM Lamp
PL802: FM Lamp
PL803~PL805: Dial Lamp
PL806: Pointer Lamp
PL807: Meter Lamp
PL808: STEREO Lamp



Position
OFF
STEREO
OFF
ON
OFF

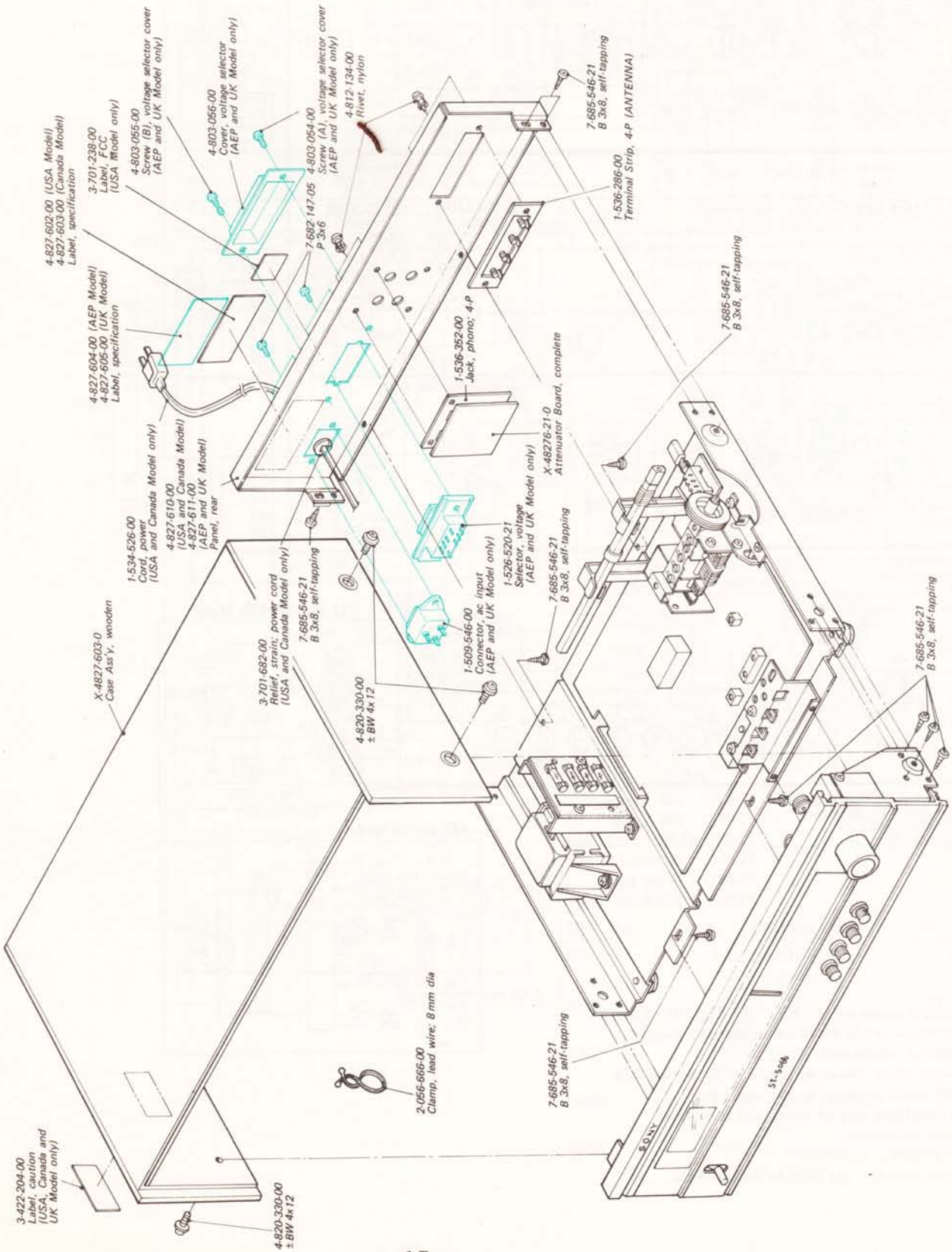
Note:
All resistance values are in ohms. k = 1,000 M = 1,000 k
All capacitance values are in μF except as indicated with p, which means μμF.
All voltages are dc measured with a VOM having 20 k ohms/volt input impedance. No signal in.
Voltage variations may be noted due to normal production tolerances.
[ ] : STEREO operation
Capacitors marked △ are built in transformers.

SECTION 6
EXPLODED VIEWS

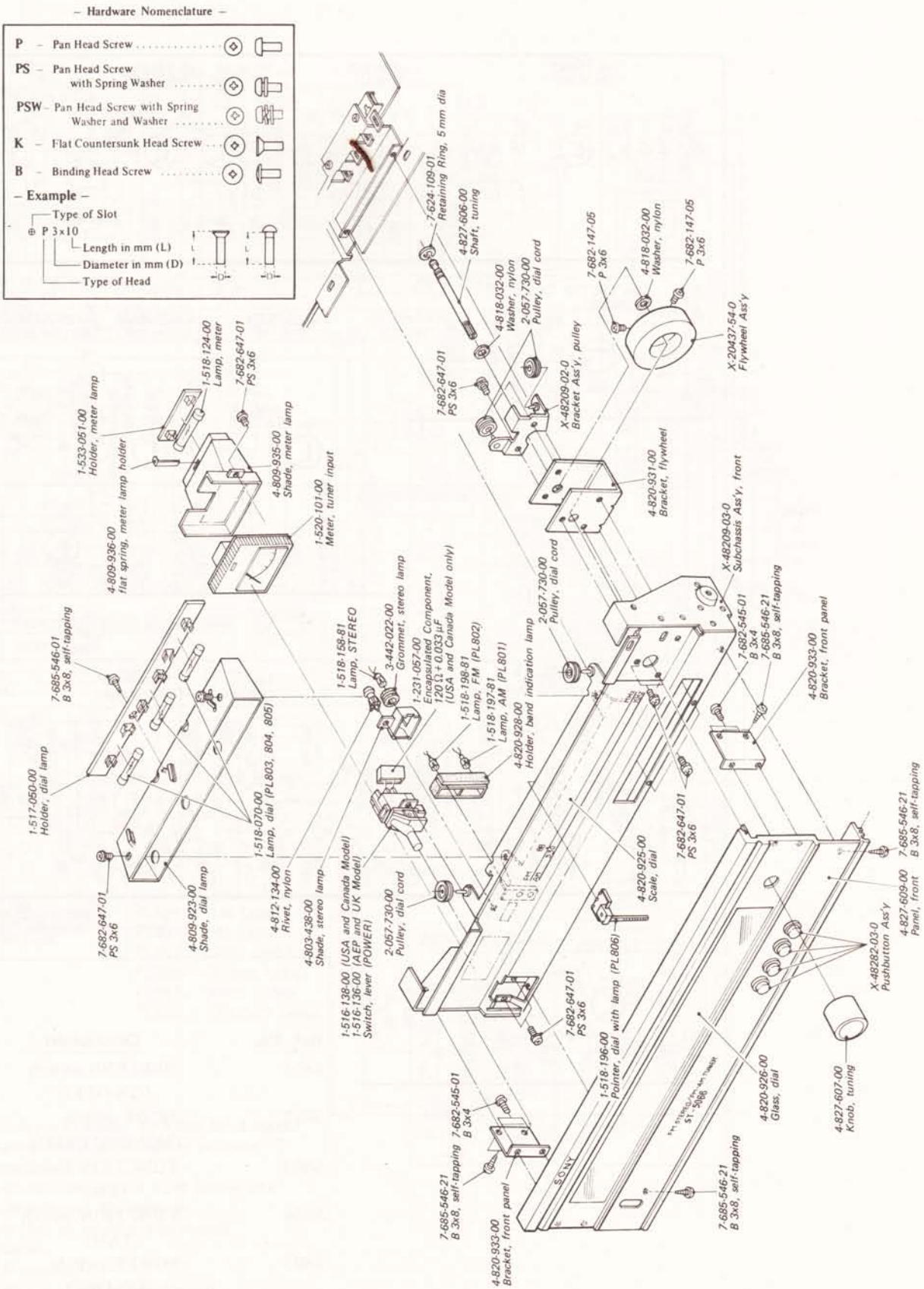
(1) **Note:** Applicable Serial Numbers:

USA Model (Serial No. 800,001 and later)
Canada Model (Serial No. 700,001 and later)
UK Model (Serial No. 600,001 and later)
AEP Model (Serial No. 500,001 and later)

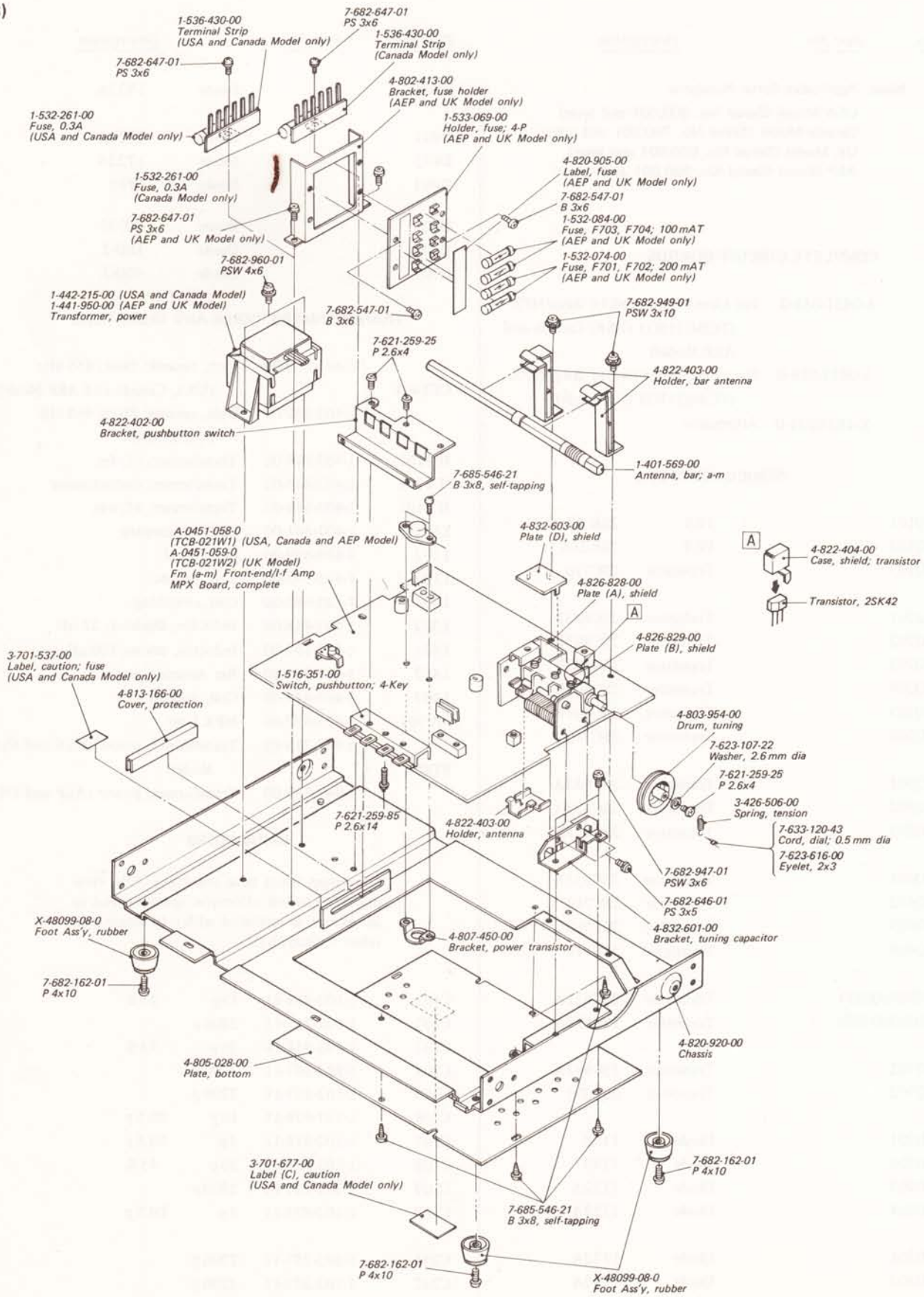
Note: All screws in this service manual are phillips type (cross recess type) unless otherwise indicated. (–); slotted head.



(2)


– Hardware Nomenclature –
P – Pan Head Screw
PS – Pan Head Screw with Spring Washer
PSW – Pan Head Screw with Spring Washer and Washer
K – Flat Countersunk Head Screw
B – Binding Head Screw
– Example –
Type of Slot
P 3x10
Length in mm (L)
Diameter in mm (D)
Type of Head
7-624-109-01 Retaining Ring, 5 mm dia
4-827-606-00 Shaft, tuning
4-818-032-00 Washer, nylon
2-057-730-00 Pulley, dial cord
7-682-147-05 P 3x6
4-818-032-00 Washer, nylon
7-682-147-05 P 3x6
X-20437-54-0 Flywheel Ass'y
7-682-647-01 PS 3x6
X-48209-02-0 Bracket Ass'y, pulley
4-820-931-00 Bracket, flywheel
1-518-124-00 Lamp, meter
7-682-647-01 PS 3x6
1-533-051-00 Holder, meter lamp
4-809-936-00 flat spring, meter lamp holder
4-809-935-00 Shade, meter lamp
1-520-101-00 Meter, tuner input
X-48209-03-0 Subchassis Ass'y, front
2-057-730-00 Pulley, dial cord
7-685-546-01 B 3x8, self-tapping
1-518-158-81 Lamp, STEREO
3-442-022-00 Grommet, stereo lamp
1-231-057-00 Encapsulated Component, 1201+-0.033 µF (USA and Canada Model only)
1-518-198-81 Lamp, FM (PL802)
1-518-197-81 Lamp, AM (PL801)
4-820-928-00 Holder, band indication lamp
7-682-545-01 B 3x4
7-685-546-21 B 3x8, self-tapping
4-820-933-00 Bracket, front panel
1-517-050-00 Holder, dial lamp
1-518-070-00 Lamp, dial (PL803, 804, 805)
4-812-134-00 Rivet, nylon
4-803-438-00 Shade, stereo lamp
1-516-138-00 (USA and Canada Model)
1-516-136-00 (AEP and UK Model)
Switch, lever (POWER)
2-057-730-00 Pulley, dial cord
4-820-925-00 Scale, dial
7-682-647-01 PS 3x6
7-682-647-01 PS 3x6
4-809-923-00 Shade, dial lamp
7-682-647-01 PS 3x6
4-827-609-00 Panel, front
7-685-546-21 B 3x8, self-tapping
X-48282-03-0 Pushbutton Ass'y
1-518-196-00 Pointer, dial with lamp (PL806)
4-820-926-00 Glass, dial
4-827-607-00 Knob, tuning
7-685-546-21 B 3x8, self-tapping
7-682-545-01 B 3x4
7-685-546-21 B 3x8, self-tapping
4-820-933-00 Bracket, front panel
SONY
ST-5066

(3)


1-536-430-00
Terminal Strip
(USA and Canada Model only)
7-682-647-01
PS 3x6
7-682-647-01
PS 3x6
1-536-430-00
Terminal Strip
(Canada Model only)
4-802-413-00
Bracket, fuse holder
(AEP and UK Model only)
1-532-261-00
Fuse, 0.3A
(USA and Canada Model only)
1-533-069-00
Holder, fuse; 4-P
(AEP and UK Model only)
1-532-261-00
Fuse, 0.3A
(Canada Model only)
4-820-905-00
Label, fuse
(AEP and UK Model only)
7-682-547-01
B 3x6
7-682-647-01
PS 3x6
(AEP and UK Model only)
1-532-084-00
Fuse, F703, F704; 100 mAT
(AEP and UK Model only)
1-532-074-00
Fuse, F701, F702; 200 mAT
(AEP and UK Model only)
7-682-960-01
PSW 4x6
1-442-215-00 (USA and Canada Model)
1-441-950-00 (AEP and UK Model)
Transformer, power
7-682-547-01
B 3x6
7-682-949-01
PSW 3x10
7-621-259-25
P 2.6x4
4-822-403-00
Holder, bar antenna
4-822-402-00
Bracket, pushbutton switch
1-401-569-00
Antenna, bar; a-m
7-685-546-21
B 3x8, self-tapping
A-0451-058-0
(TCB-021W1) (USA, Canada and AEP Model)
A-0451-059-0
(TCB-021W2) (UK Model)
Fm (a-m) Front-end/I-f Amp
MPX Board, complete
4-832-603-00
Plate (D), shield
A
4-822-404-00
Case, shield; transistor
Transistor, 2SK42
4-826-828-00
Plate (A), shield
A
4-826-829-00
Plate (B), shield
3-701-537-00
Label, caution; fuse
(USA and Canada Model only)
1-516-351-00
Switch, pushbutton; 4-Key
4-813-166-00
Cover, protection
4-803-954-00
Drum, tuning
7-623-107-22
Washer, 2.6 mm dia
7-621-259-25
P 2.6x4
3-426-506-00
Spring, tension
7-633-120-43
Cord, dial; 0.5 mm dia
7-623-616-00
Eyelet, 2x3
7-621-259-85
P 2.6x14
4-822-403-00
Holder, antenna
7-682-947-01
PSW 3x6
7-682-646-01
PS 3x5
4-832-601-00
Bracket, tuning capacitor
X-48099-08-0
Foot Ass'y, rubber
4-807-450-00
Bracket, power transistor
7-682-162-01
P 4x10
4-820-920-00
Chassis
4-805-028-00
Plate, bottom
3-701-677-00
Label (C), caution
(USA and Canada Model only)
7-682-162-01
P 4x10
7-685-546-21
B 3x8, self-tapping
7-682-162-01
P 4x10
X-48099-08-0
Foot Ass'y, rubber

SECTION 7
ELECTRICAL PARTS LIST

Note: Applicable Serial Numbers:
USA Model (Serial No. 800,001 and later)
Canada Model (Serial No. 700,001 and later)
UK Model (Serial No. 600,001 and later)
AEP Model (Serial No. 500,001 and later)

COMPLETE CIRCUIT BOARDS

Part No.	Description
A-0451-058-0	Fm (A-m) Front-end/I-f Amp/MPX (TCB-021W1) (USA, Canada and AEP Model)
A-0451-059-0	Fm (A-m) Front-end/I-f Amp/MPX (TCB-021W2) (UK Model)
X-48276-21-0	Attenuator

SEMICONDUCTORS

Ref. No.	Description	
Q101	FET	2SK 42
Q102	FET	2SK23A
Q103	Transistor	2SC710
Q201	Transistor	2SC403B
Q202	Transistor	2SC403B
Q203	Transistor	2SC403B
Q204	Transistor	2SC403B
Q205	Transistor	2SC403B
Q206	Transistor	2SC710
Q301	Transistor	2SC633A
Q302	Transistor	2SC633A
Q303	Transistor	2SC633A
Q401	Transistor	2SC633A
Q402	Transistor	2SC710
Q403	Transistor	2SC710
Q404	Transistor	2SC710
Q501(Q551)	Transistor	2SC631A
Q502(Q552)	Transistor	2SC633A
Q701	Transistor	2SC633A
Q702	Transistor	2SD291
D201	Diode	1T40
D202	Diode	1T40
D203	Diode	1T22A
D204	Diode	1T22A
D301	Diode	1T22A
D302	Diode	1T22A
D303	Diode	1T22A
D304	Diode	1T22A
D401	Diode	1T22A
D402	Diode	1T22A
D403	Diode	1T40
D701	Diode	MZ-12
D702	Diode	10D-2
D703	Diode	10D-2

TRANSFORMERS, COILS AND INDUCTORS

Ref. No.	Part No.	Description
CFT401	1-403-150-00	Unit, ceramic filter; 455 kHz (USA, Canada and AEP Model)
	1-403-830-00	Unit, ceramic filter; 468 kHz (UK Model)
IFT101	1-403-914-00	Transformer, i-f; fm
IFT201	1-403-849-00	Transformer, discriminator
IFT401	1-403-149-00	Transformer, i-f; a-m
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	1-425-683-00	Coil, switching
L302	1-407-418-00	Inductor, shielded; 22 mH
L401	1-407-169-00	Inductor, micro; 100 μH
L402	1-401-569-00	Bar Antenna, a-m
L403	1-405-444-00	Coil, a-m osc
MU301	1-425-687-00	MPX Unit
PT801	1-442-215-00	Transformer, power (USA and Canada Model)
	1-441-950-00	Transformer, power (AEP and UK Model)

CAPACITORS

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

Ref. No.	Part No.		
C101	1-102-953-11	18 p	±5%
C102	1-102-257-11	2200 p	
C103	1-102-958-11	20 p	±5%
C104	1-102-257-11	2200 p	
C105	1-102-257-11	2200 p	
C106	1-101-978-11	10 p	±0.5 p
C107	1-102-875-11	7 p	±0.5 p
C108	1-101-973-11	20 p	±5%
C109	1-102-257-11	2200 p	
C110	1-102-872-11	5 p	±0.5 p
C201	1-102-257-11	2200 p	
C202	1-102-257-11	2200 p	
C203	1-102-257-11	2200 p	

Ref. No.	Part No.		Description		
C204	1-102-257-11	2200 p			
C205	1-102-257-11	2200 p			
C206	1-102-977-11	200 p	±5%		
C207	1-101-924-11	0.022		25V	
C208	1-102-977-11	200 p	±5%		
C209	1-121-402-11	33		10V	elect
C210	1-101-924-11	0.022		25V	
C211	1-121-479-11	22		16V	elect
C212	1-101-924-11	0.022		25V	
C213	1-102-947-11	10 p	±5%		
C214	1-101-924-11	0.022		25V	
C215	1-101-924-11	0.022		25V	
C216	1-101-924-11	0.022		25V	
C217	1-101-924-11	0.022		25V	
C218	1-121-398-11	10		25V	elect
C219	1-121-398-11	10		25V	elect
C220	1-101-924-11	0.022		25V	
C221	1-101-924-11	0.022		25V	
C301	1-121-392-11	3.3		25V	elect
C302	1-121-392-11	3.3		25V	elect
C303	1-121-413-11	100		6.3V	elect
C304	1-103-601-11	100 p	±5%	50V	styrol
C305	1-121-391-11	1		50V	elect
C306	1-121-651-11	10		16V	elect
C307	1-121-409-11	47		16V	elect
C308(C358)	1-105-679-12	0.033	±10%	50V	mylar
C309(C359)	1-105-675-12	0.015	±10%	50V	mylar
C310(C360)	1-105-682-12	0.056	±10%	50V	mylar
C311	1-105-673-12	0.01	±10%	50V	mylar
C312	1-103-573-11	4700 p	±5%	50V	styrol
C313	1-121-409-11	47		16V	elect
C314	1-102-979-11	240 p	±5%		
C315	1-102-979-11	240 p	±5%		
C316(C366)	1-105-674-12	0.012	±10%	50V	mylar
		(USA, Canada and AEP Model only)			
C401	1-105-677-12	0.022	±10%	50V	mylar
C402	1-105-682-12	0.056	±10%	50V	mylar
C403	1-105-677-12	0.022	±10%	50V	mylar
C404	1-105-677-12	0.022	±10%	50V	mylar
C405	1-105-677-12	0.022	±10%	50V	mylar
C406	1-105-673-12	0.01	±10%	50V	mylar
C407	1-105-685-12	0.1	±10%	50V	mylar
C408	1-105-677-12	0.022	±10%	50V	mylar
C409	1-101-884-11	56 p	±5%		
C410	1-105-677-12	0.022	±10%	50V	mylar
C411	1-105-675-12	0.015	±10%	50V	mylar
C412	1-105-677-12	0.022	±10%	50V	mylar
C413	1-121-413-11	100		6.3V	elect
C414	1-105-677-12	0.022	±10%	50V	mylar
C415	1-105-677-12	0.022	±10%	50V	mylar
C416	1-105-673-12	0.01	±10%	50V	mylar
C417	1-105-677-12	0.022	±10%	50V	mylar
C418	1-121-392-11	3.3		25V	elect
C419	1-105-677-12	0.022	±10%	50V	mylar
C420	1-121-392-11	3.3		25V	elect
C421	1-121-392-11	3.3		25V	elect
C422	1-121-415-11	100		16V	elect
C423	1-105-677-12	0.022	±10%	50V	mylar
C424	1-105-669-12	0.0047	±10%	50V	mylar
C425	1-121-651-11	10		16V	elect
C426	1-121-392-11	3.3		25V	elect
C427	1-121-398-11	10		25V	elect
C428	1-121-479-11	22		16V	elect
C501	1-121-409-11	47		16V	elect
C502(C552)	1-102-973-11	100 p	±5%		
C503(C553)	1-121-419-11	220		6.3V	elect
C504(C554)	1-121-392-11	3.3		25V	elect
C701	1-121-416-11	100		25V	elect
C702	1-121-422-11	220		25V	elect
C703	1-121-733-11	470		25V	elect
C704	1-105-677-12	0.022	±10%	50V	mylar
C705	1-105-677-12	0.022	±10%	50V	mylar
CT101,102, CT103 CT401,402 CV101,102, CV103 CV401,402	1-151-275-00	Tuning			

RESISTORS

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

R101	1-244-673-11	1 k
R102	1-244-685-11	3.3 k
R103	1-244-679-11	1.8k
R104	1-242-705-11	22 k
R105	1-242-651-11	120
R106	1-242-685-11	3.3 k
R107	1-244-657-11	220
R201	1-244-657-11	220
R202	1-244-689-11	4.7 k
R203	1-244-701-11	15 k
R204	1-244-665-11	470
R205	1-244-673-11	1 k

Ref. No.	Part No.		Description
R206	1-244-625-11	10	
R207	1-244-673-11	1 k	
R208	1-244-657-11	220	
R209	1-244-657-11	220	
R210	1-244-690-11	5.1 k	
R211	1-244-695-11	8.2 k	
R212	1-244-669-11	680	
R213	1-244-673-11	1 k	
R214	1-244-657-11	220	
R215	1-244-657-11	220	
R216	1-244-705-11	22 k	
R217	1-244-673-11	1 k	
R218	1-244-667-11	560	
R219	1-244-675-11	1.2 k	
R220	1-244-689-11	4.7 k	
R221	1-244-671-11	820	
R222	1-244-667-11	560	
R223	1-244-689-11	4.7 k	
R224	1-244-695-11	8.2 k	
R225	1-244-705-11	22 k	
R226	1-244-680-11	2 k	
R227	1-244-647-11	82	
R228	1-244-657-11	220	
R229	1-244-680-11	2 k	
R230	1-244-685-11	3.3 k	
R231	1-244-673-11	1 k	
R232	1-244-643-11	56	
R233	1-244-643-11	56	
R234	1-244-643-11	56	
R235	1-244-643-11	56	
R236	1-244-701-11	15 k	
R301	1-244-719-11	82 k	
R302	1-244-713-11	47 k	
R303	1-244-719-11	82 k	
R304	1-244-673-11	1 k	
R305	1-244-649-11	100	
R306	1-244-701-11	15 k	
R307	1-244-655-11	180	
R308	1-244-689-11	4.7 k	
R309	1-244-695-11	8.2 k	
R310	1-244-671-11	820	
R311	1-244-689-11	4.7 k	
R312	1-244-677-11	1.5 k	
R313	1-244-691-11	5.6 k	
R314	1-244-694-11	7.5 k	
R315	1-244-721-11	100 k	
R316	1-244-625-11	10	
R317	1-244-703-11	18 k	
R318	1-202-557-11	220	½W composition
R319	1-244-745-11	1 M	
R363	1-244-691-11	5.6 k	

Ref. No.	Part No.		description
R364	1-244-694-11	7.5 k	
R401	1-244-691-11	5.6 k	
R402	1-244-691-11	5.6 k	
R403	1-244-664-11	430	
R404	1-244-707-11	27 k	
R405	1-244-693-11	6.8 k	
R406	1-244-673-11	1 k	
R407	1-244-705-11	22 k	
R408	1-244-729-11	220 k	
R409	1-244-673-11	1 k	
R410	1-244-673-11	1 k	
R411	1-244-677-11	1.5 k	
R412	1-244-689-11	4.7 k	
R413	1-244-643-11	56	
R414	1-244-665-11	470	
R415	1-244-643-11	56	
R416	1-244-689-11	4.7 k	
R417	1-202-566-11	510	½W composition
R418	1-244-645-11	68	
R419	1-244-689-11	4.7 k	
R420	1-244-672-11	910	
R421	1-244-661-11	330	
R422	1-244-676-11	1.3 k	
R423	1-244-701-11	15 k	
R424	1-244-722-11	110 k	
R425	1-244-671-11	820	
R426	1-244-680-11	2 k	
R427	1-244-663-11	390	
R428	1-244-669-11	680	
R429	1-244-689-11	4.7 k	
R430	1-244-643-11	56	
R501	1-244-669-11	680	
R502(R552)	1-244-661-11	330	
R503(R553)	1-244-723-11	120 k	
R504(R554)	1-244-699-11	12 k	
R505(R555)	1-244-717-11	68 k	
R506(R556)	1-244-661-11	330	
R507(R557)	1-244-685-11	3.3 k	
R558	1-244-709-11	33 k	
R601	1-244-697-11	10 k	
R602	1-244-694-11	7.5 k	
R603	1-244-694-11	7.5 k	
R604	1-244-697-11	10 k	
R605	1-244-684-11	3 k	
R606	1-244-701-11	15 k	
R607	1-244-701-11	15 k	
R608	1-244-684-11	3 k	
R701	1-244-699-11	12 k	

Ref. No.	Part No.	Description
R702	1-244-680-11	2 k
R703	1-244-665-11	470
R704	1-244-665-11	470
R801	1-202-645-11	1 M ½W composition (USA and Canada Model only)
RT501	1-222-761-00	1 k (separation adj.)
	SWITCHES	
S801~S804	1-516-351-00	Pushbutton, 4-key (HI-BLEND, MODE, FUNCTION)
S805	1-516-136-00	Lever, (POWER) (AEP and UK Model)
	1-516-138-00	Lever, (POWER) (USA and Canada Model)
	FILTERS	
CF201,202	1-527-220-11	Fm I-f, ceramic 10.70 MHz (red)
	1-527-220-21	Fm I-f, ceramic 10.67 MHz (blue)
	1-527-220-31	Fm I-f, ceramic 10.73 MHz (orange)
	1-527-220-41	Fm I-f, ceramic 10.64 MHz (black)
	1-527-220-51	Fm I-f, ceramic 10.76 MHz (white)
	MISCELLANEOUS	
CP201	1-231-193-00	Encapsulated Component
CP801	1-231-057-00	Encapsulated Component, 120 Ω + 0.033 μF (USA and Canada Model only)

Ref. No.	Part No.	Description
CP301,351	1-231-224-00	Encapsulated Component
F701	1-532-261-00	Fuse, 0.3 A 250 V (USA and Canada Model)
	1-532-074-00	Fuse, 200 mAT (AEP and UK Model)
F702	1-532-261-00	Fuse, 0.3A 250 V (Canada Model)
	1-532-074-00	Fuse, 200mAT (AEP and UK Model)
F703,704	1-532-084-00	Fuse, 100mAT (AEP and UK Model only)
J801	1-536-286-00	Terminal Strip, 4-P (ANTENNA)
J802	1-536-352-00	Jack, phono; 4-P
M801	1-520-101-00	Meter, TUNER INPUT
P801	1-534-526-00	Cord, power (USA and Canada Model only)
PL801	1-518-197-81	Lamp, AM 8V 30mA
PL802	1-518-198-81	Lamp, FM 8V 30mA
PL803~PL805	1-518-070-00	Lamp, dial 8V 300mA
PL806	1-518-196-00	Lamp, pointer 8V 50mA
PL807	1-518-124-00	Lamp, meter 8V 250mA
PL808	1-518-158-81	Lamp, STEREO 8V 30 mA
VS801	1-526-520-21	Selector, voltage (AEP and UK Model only)
CNJ801	1-509-546-00	Connector, ac input; 3-P (AEP and UK Model only)
	1-517-050-00	Holder, dial lamp
	1-533-051-00	Holder, meter lamp
	1-533-051-00	Holder, dial lamp
	1-533-069-00	Holder, fuse; 4-P (AEP and UK Model only)
	1-536-430-00	Terminal Strip (USA and Canada Model only)

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