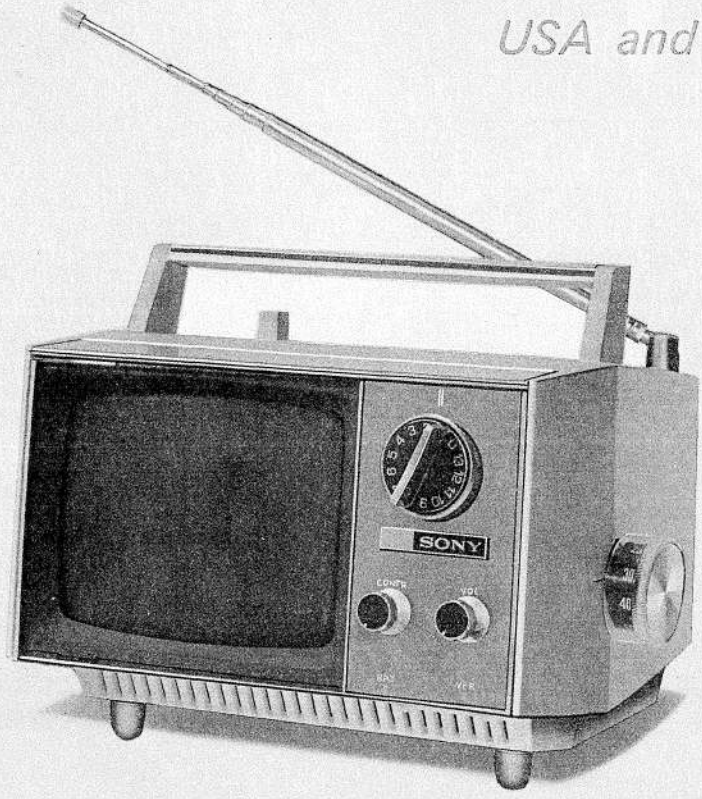
ISO

*Set using ISO screws*

# TV-510U
## BP-21

*USA and CANADA Model*




## SPECIFICATIONS

| | |
|---|---|
| **TV-signal Standards:** | American TV-standard |
| **Picture Tube:** | 5" (measured diagonally), 70° deflection aluminized screen 140CB4 |
| **Semiconductors:** | 23 transistors and 14 diodes |
| **Channel Coverage:** | VHF; ch. A2–A13<br>UHF; ch. A14–A83 |
| **Antenna System:** | Built-in telescopic antenna<br>Terminals for 75-ohm external antenna |
| **Tuner System:** | VHF; Disc turret type<br>UHF; Continuous tuning type |
| **VIF Circuit:** | 3 stages with 4 stagger tuned element<br>Picture i-f carrier; 45.75 MHz<br>Sound i-f carrier; 41.25 MHz |
| **Sound System:** | 4.5 MHz intercarrier system<br>Power output stage; OTL system 350 mW<br>Speaker; 2¾" (7 cm), 40 ohms |
| **Automatic Control Systems:** | Forward agc<br>Single pulse afc |
| **Power Requirements:** | AC 117V, 60Hz<br>DC 12V |
| **Power Consumption:** | AC 13W (maximum)<br>DC 8.6W (maximum) |
| **Dimensions:** | 8¾" (W) x 7" (H) x 8⅞" (D)<br>(223 mm x 178 mm x 225 mm) |
| **Weight:** | 7 lb 8 oz (3.4 kg) |

SONY®

# SERVICE MANUAL

**V-510U**

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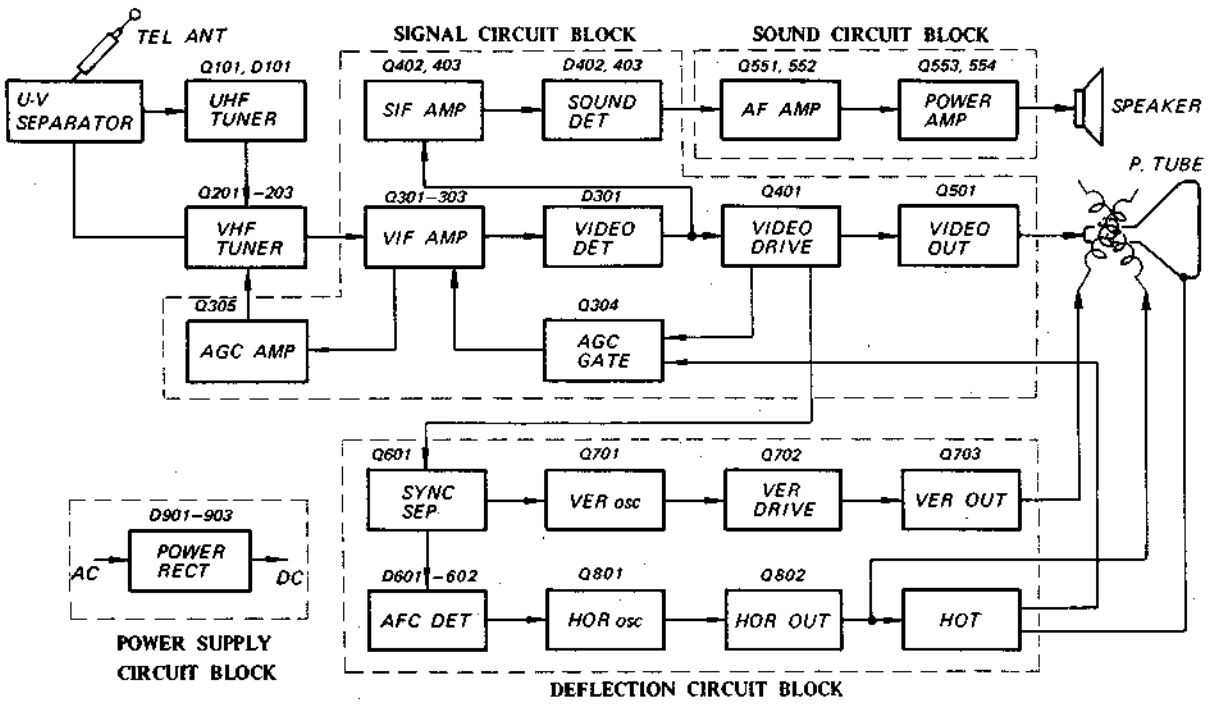
# SECTION 1
# OUTLINE

## 1-1. BLOCK DIAGRAM



## 1-2. EXTERNAL VIEW

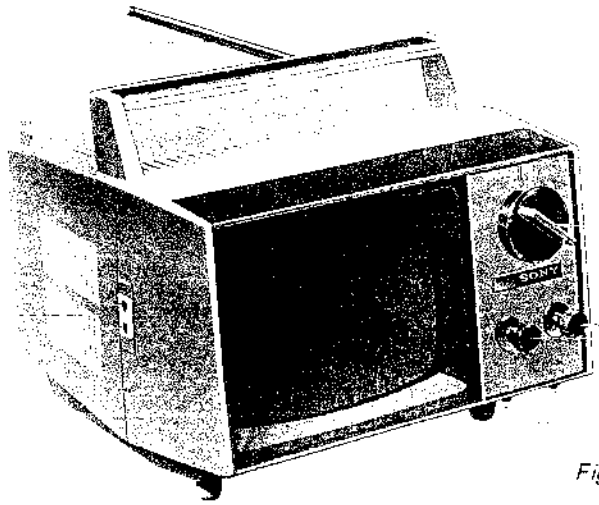



Fig. 1-1

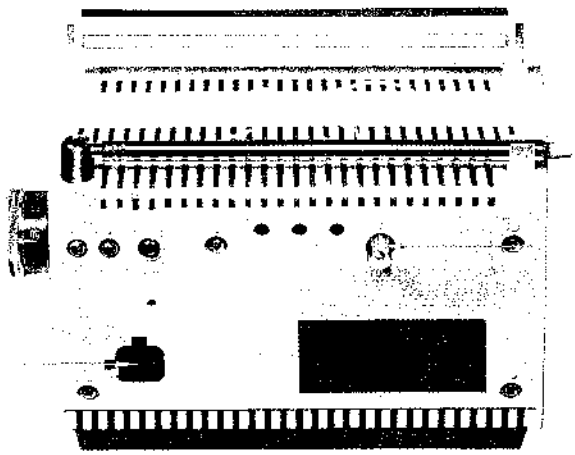



Fig. 1-2

## 1-3. INTERNAL VIEW

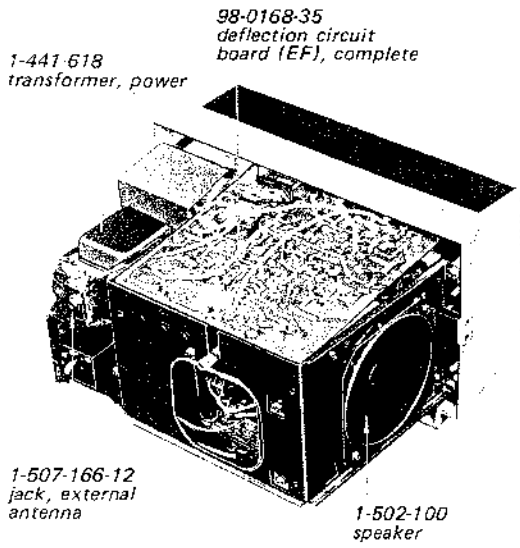



Fig. 1-3

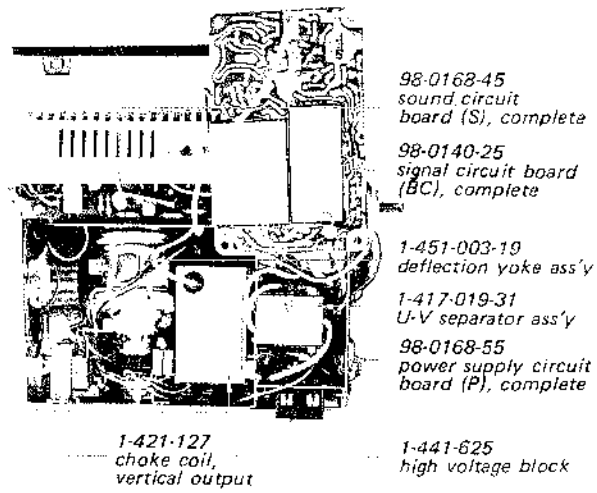



Fig. 1-4

# SECTION 2
# DISASSEMBLY

## 2-1. REAR CABINET REMOVAL

1. Remove the five screws labeled A1 A5 in Fig. 2-1.
2. Take off the rear cabinet.

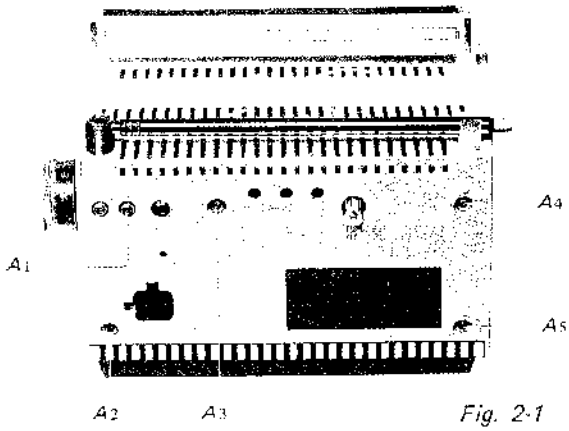



Fig. 2-1

## 2-2. CIRCUIT BOARD REMOVAL

Remove the rear cabinet to perform the following steps:

Sound Board (S)

1. Remove the two screws labeled B1 and B2 in Fig. 2-2.
2. Pull out the S-board in the direction shown by the arrow in Fig. 2-2.
3. Unsolder the four PVC leads and one shielded cable illustrated in Fig. 2-3.

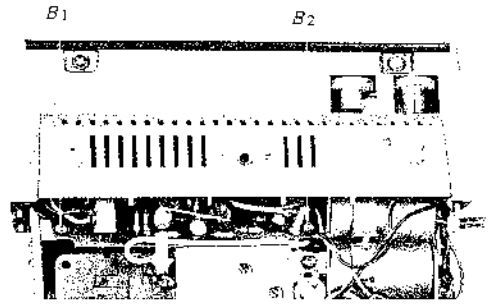



Fig. 2-2

Signal Board (BC)

1. Remove the three screws labeled C1 C3 in Fig. 2-4.
2. Take off the BC board as shown in Fig. 2-4.

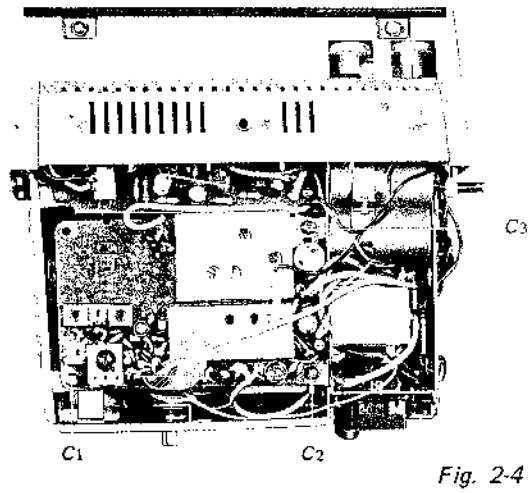



Fig. 2-4

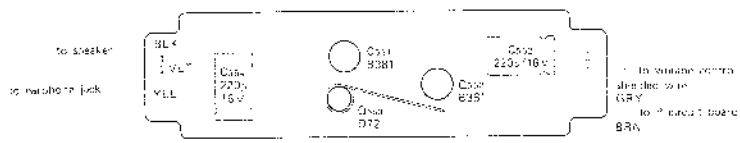


Fig. 2-3

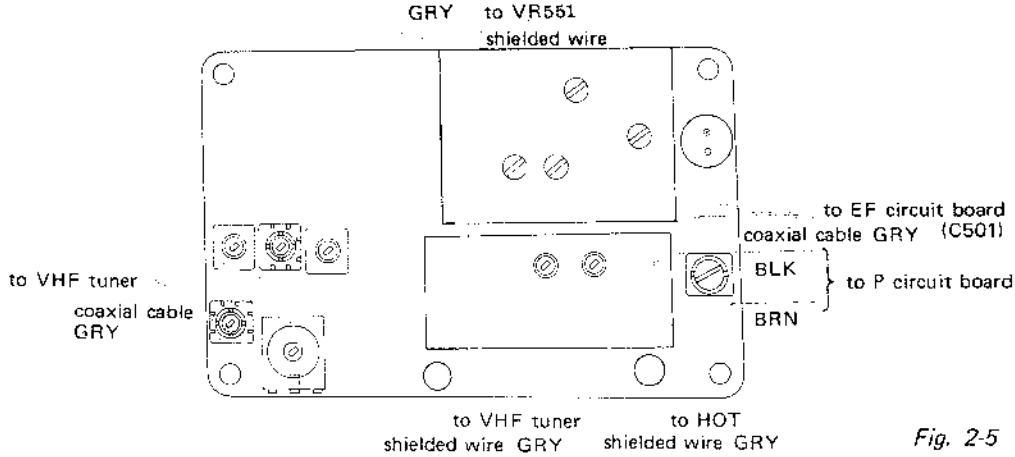



Fig. 2-5

## Power Board (P)

1. Remove a screw labeled D1 in Fig. 2-6.
2. Unsolder the two terminals of a electrolytic capacitor labeled E1 in Fig. 2-6 and then lift off the P board.

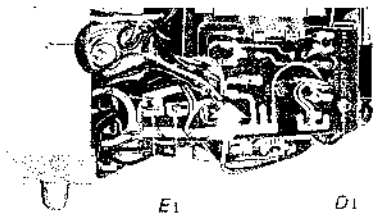



Fig. 2-6

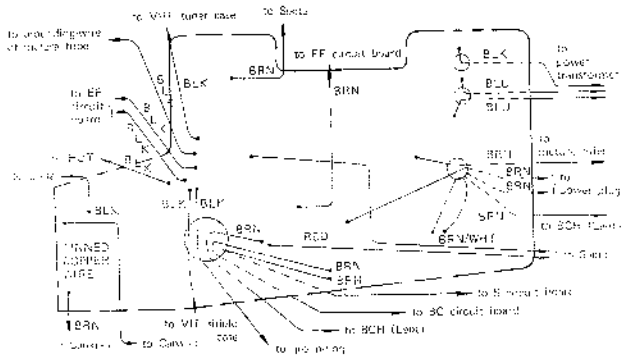


Fig. 2-7

## Deflection Board (EF)

1. Remove the four screws labeled F1 F4 in Fig. 2-8.
2. Pull up the EF board as shown in Fig. 2-8.
3. Pull off the seven pin-plugs labeled G1-G7 in Fig. 2-9.
4. Turn the EF board in the direction shown by the arrow in Fig. 2-8.

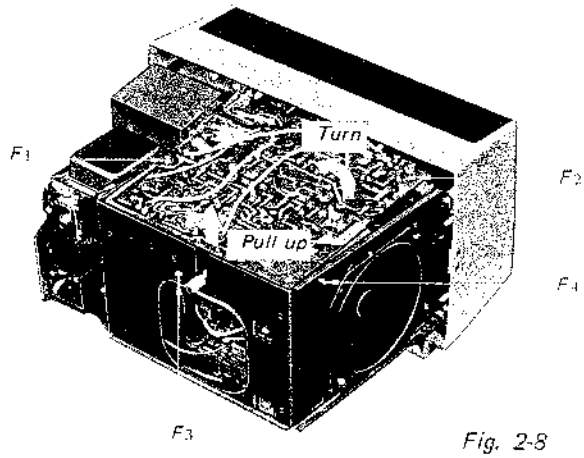



Fig. 2-8

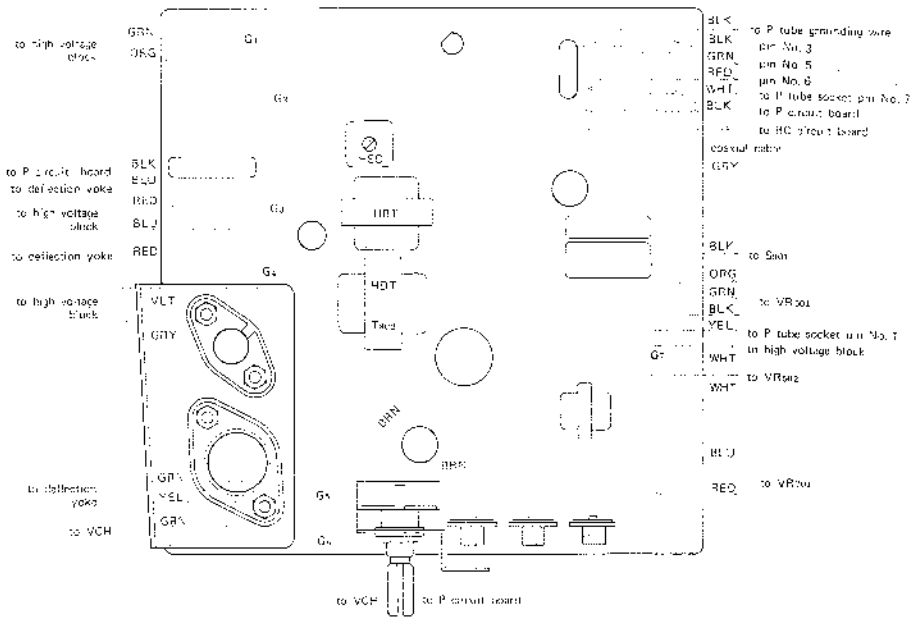


Fig. 2-9

## 2-3. PROTECTOR REMOVAL

1. Pull off four front-panel knobs as shown in Fig. 2-10.
2. Remove the two screws labeled H1 and H2 in Fig. 2-10.
3. Remove the protector.

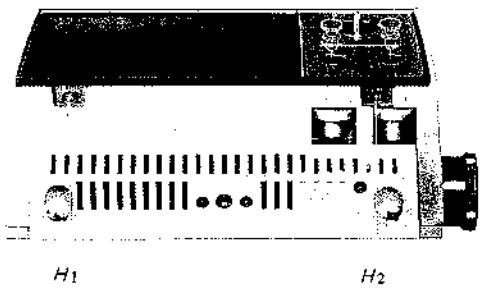



Fig. 2-10

## 2-4. FRONT CABINET REMOVAL

1. Remove the rear cabinet and protector.
2. Remove the screw labeled J1 in Fig. 2-11.
3. Remove the two screws labeled K1 and K2 in Fig. 2-12.

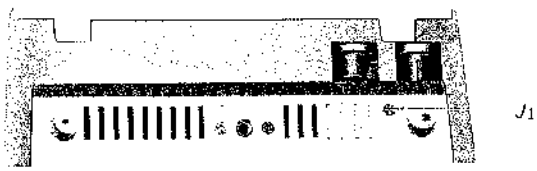



Fig. 2-11

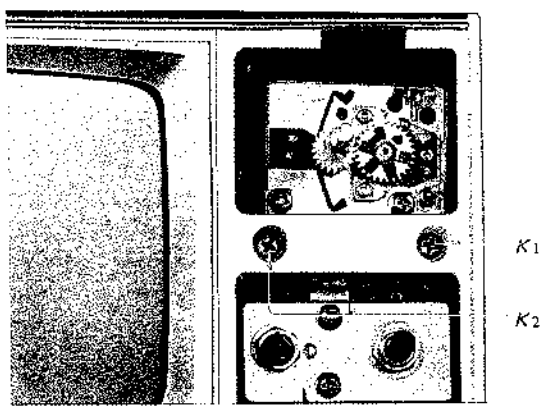



Fig. 2-12

4. Remove the four screws labeled L1–L4 in Figs. 2-13 and 2-14.
5. Remove the S board.
6. Pull off the picture tube socket shown in Fig. 2-15.
7. Remove the anode cap shown in Fig. 2-15.
8. Unsolder the two grounding-wires shown in Fig. 2-15.
9. Remove the front cabinet with picture tube from the chassis carefully.

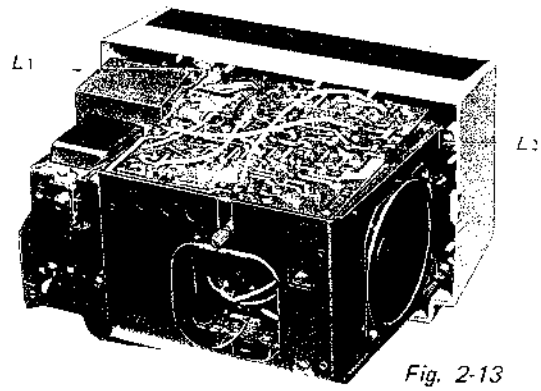



Fig. 2-13


Fig. 2-14

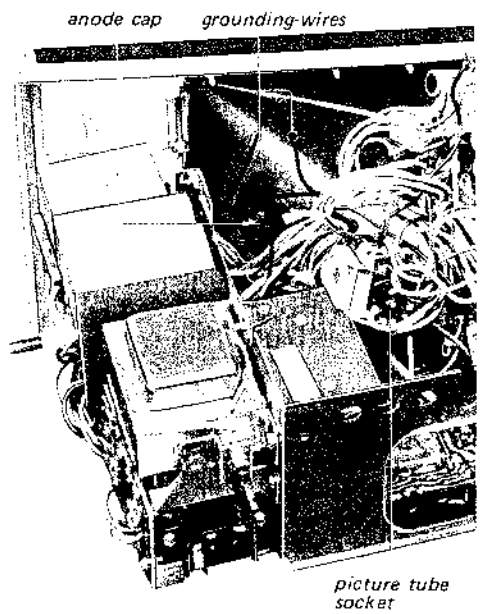



Fig. 2-15

## 2-5. SPEAKER REMOVAL

1. Remove the rear cabinet.
2. Remove the two screws labeled M1 and M2 in Fig. 2-16.
3. Unsolder the two leads on the speaker terminals.
4. Replace the speaker carefully.

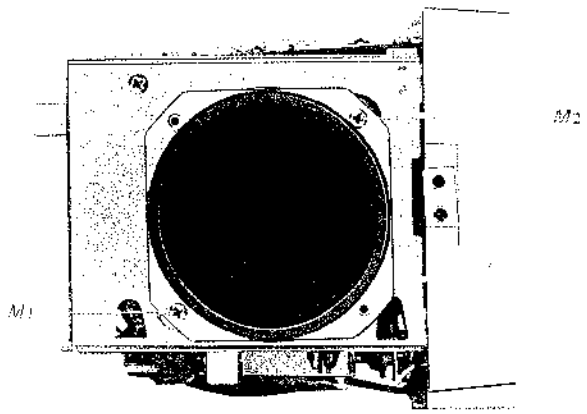



Fig. 2-16

## 2-6. HIGH VOLTAGE BLOCK REMOVAL

1. Remove the rear cabinet and EF board.
2. Remove the two screws labeled N1 and N2 in Fig. 2-17.

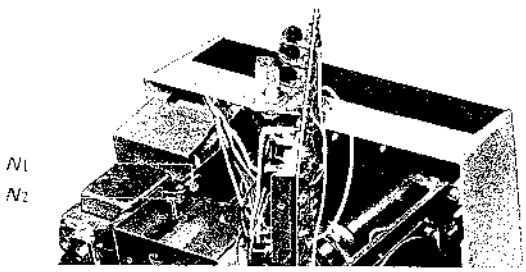



Fig. 2-17

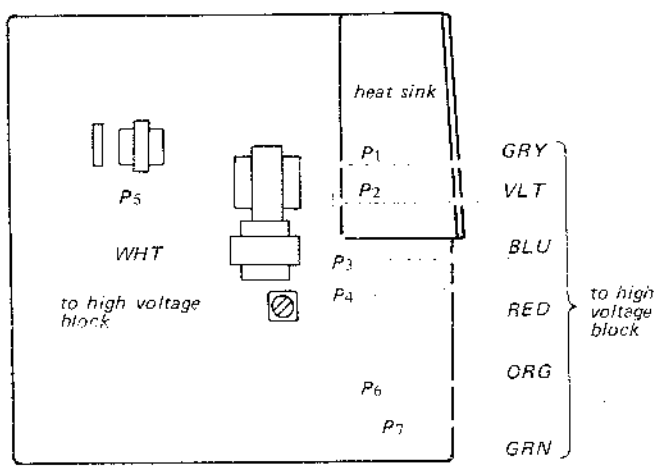



Fig. 2-18

3. Unsolder the four lead-wires on the EF board labeled P1–P4 in Fig. 2-18.
4. Pull out the three pin-plugs on the EF board labeled P5–P7 in Fig. 2-18.

## 2-7. PICTURE TUBE REMOVAL

1. Remove the rear cabinet and protector.
2. Remove the DC circuit board. (See Procedure 2-2).
3. Loosen a screw labeled Q1 in Fig. 2-19.
4. Remove the front cabinet.
5. Pull out the deflection yoke.
6. Remove the four screws labeled R1–R4 in Fig. 2-20.
7. Loosen a screw labeled S1 in Fig. 2-20.

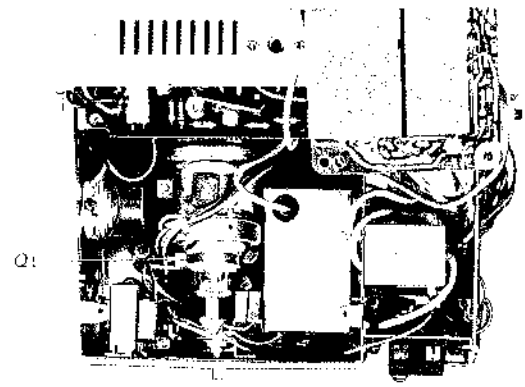



Fig. 2-19

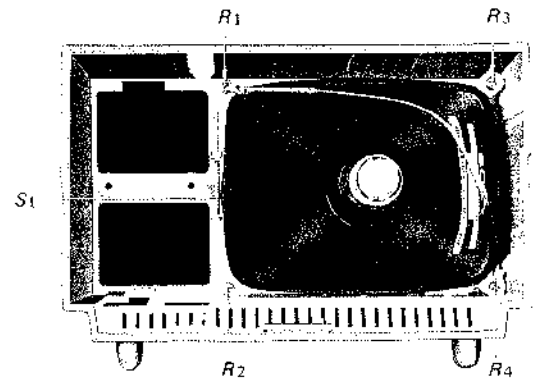



Fig. 2-20

## 2-8. VOLUME AND CONTRAST CONTROLS REMOVAL

1. Remove the protector.
2. Remove the two screws labeled T1 and T2 in Fig. 2-21.
3. Pull out the volume and contrast controls as shown in Fig. 2-23.

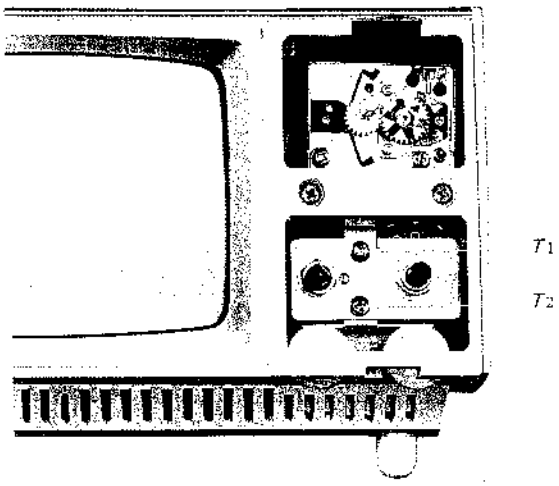



Fig. 2-21

## 2-9. VERTICAL HOLD AND BRIGHTNESS CONTROLS REMOVAL

1. Remove the protector.
2. Remove the volume and contrast controls.
3. Remove a screw labeled U1 in Fig. 2-22.
4. Pull out the vertical hold and brightness controls as shown in Fig. 2-23.

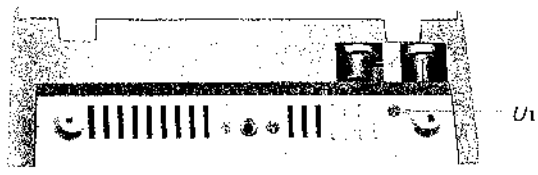



Fig. 2-22

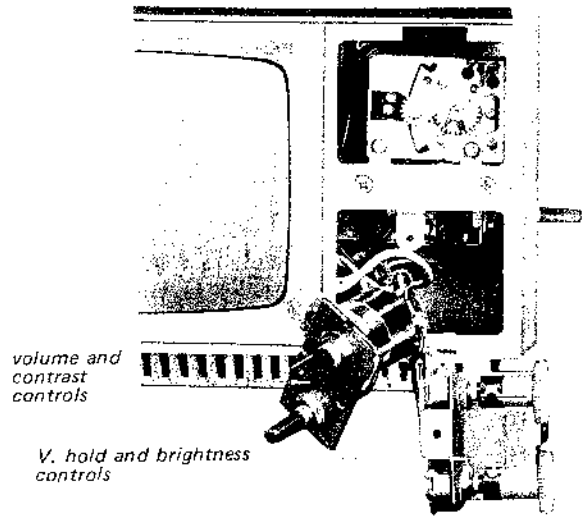



Fig. 2-23

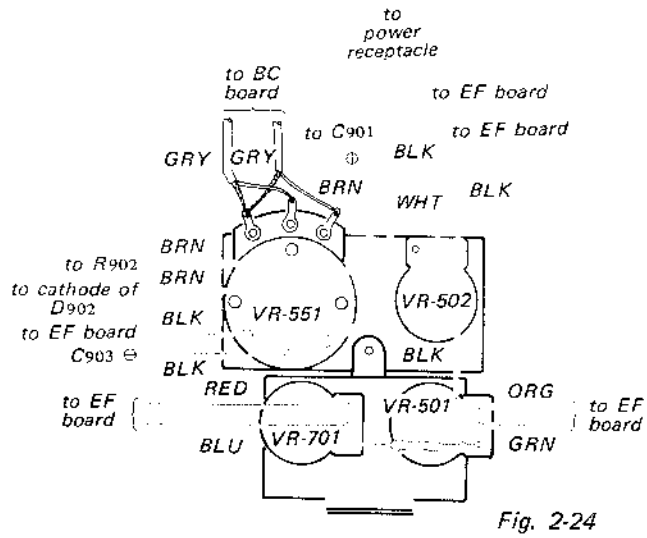



Fig. 2-24

## 2-10. TUNER BLOCK REMOVAL

### VHF Tuner Removal

1. Remove the rear cabinet and protector.
2. Remove the front cabinet.
3. Remove the two screws labeled V1 and V2 in Fig. 2-25.
4. Push the tuner toward the power transformer and lift it up.

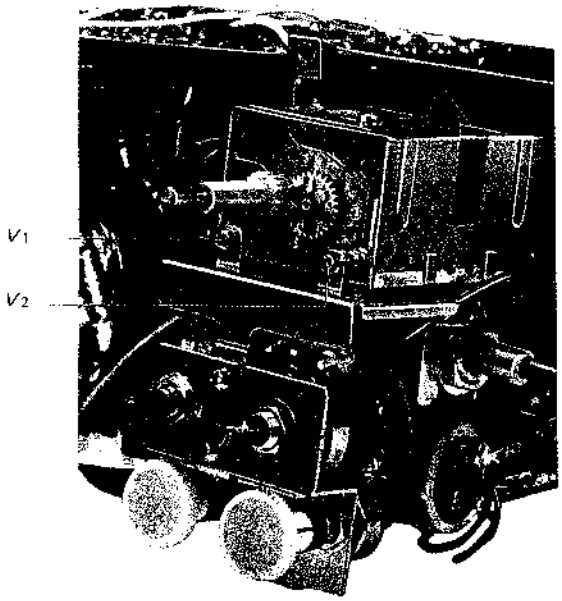



Fig. 2-25

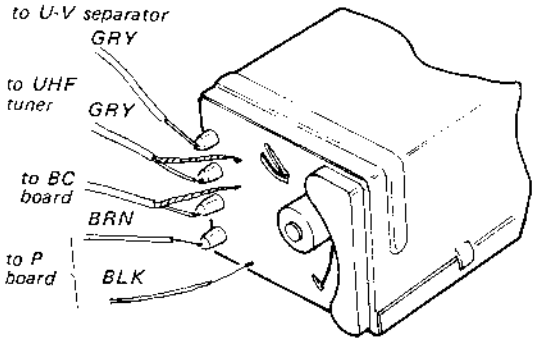



Fig. 2-26

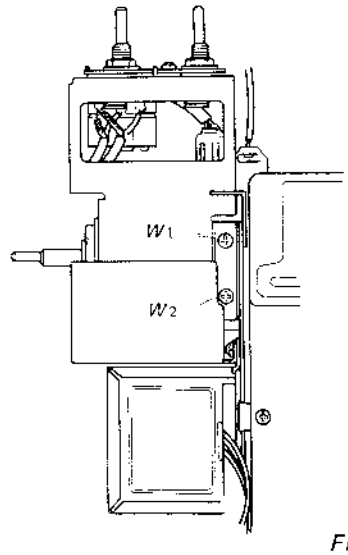



Fig. 2-27

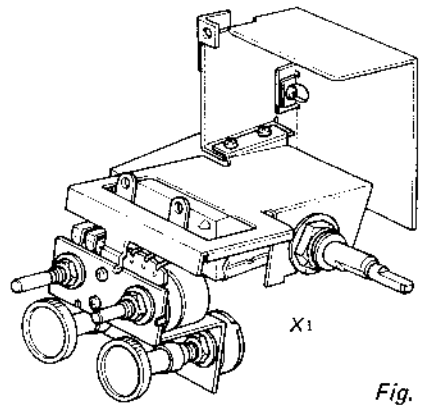



Fig. 2-28

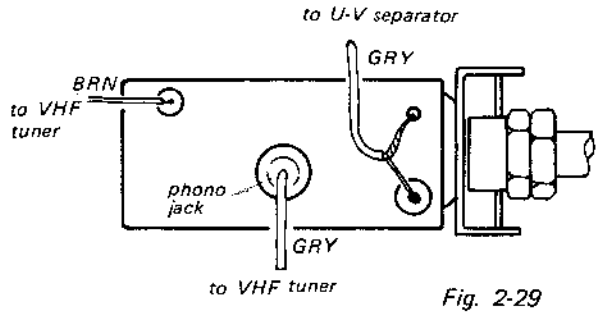



Fig. 2-29

**UHF Tuner Removal**

1. Remove the rear cabinet and protector.
2. Remove the front cabinet and VHF tuner.
3. Remove the two screws labeled W1 and W2 in Fig. 2-27.
4. Loosen a nut labeled X1 in Fig. 2-28.
5. Take off the UHF tuner carefully.

# SECTION 3
# CIRCUIT ADJUSTMENT

## 3-1. VIF ADJUSTMENTS

**Equipment Required:**

Sweep generator – covering the range of 39 ~ 48 MHz
Signal generator – covering the range of 33 ~ 35 MHz
Marker generator – covering the range of 39 ~ 48 MHz
Rheostat – 250 k ohm
Oscilloscope
VOM

**Preparations:**

1. Set the channel selector to the highest inactive channel in the area.
2. Unsolder the keying-pulse lead.
3. Connect a scope to the VIF output terminals through a noise filter consisting of a 10-k ohm resistor and a 300-pF capacitor as shown in Fig. 3-1.

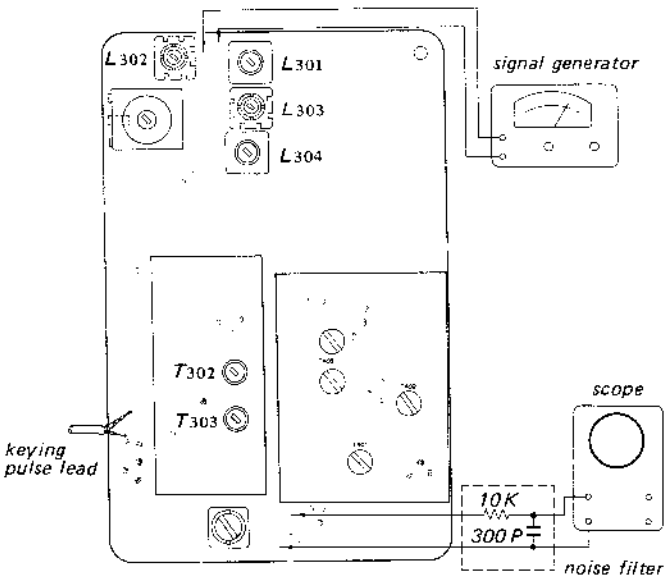



Fig. 3-1

**33.75 MHz Trap Adjustments**

1. Unsolder the VIF INPUT cable.
2. Connect a signal generator (33.75 MHz with 1 kHz 40% AM modulation) to the point where the VIF INPUT cable was connected as shown in Fig. 3-1.
3. Adjust the core of L304 for minimum 33.75 MHz modulated waveform on the scope.
4. Disconnect the signal generator.

**39.75 MHz, 41.25 MHz and 47.25 MHz Trap Adjustments**

1. Connect the VIF INPUT cable.
2. Connect a sweep generator to the tuner's test point through a 0.01-μF capacitor as shown in Fig. 3-2.
3. Loosely couple a marker generator to the output lead of the sweep generator.
4. Make the adjustments specified in TABLE 3-1 to produce the trap response curve as shown in Fig. 3-3.

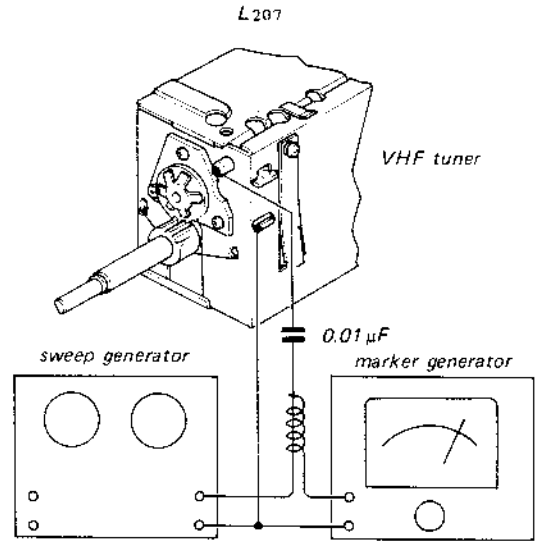



Fig. 3-2

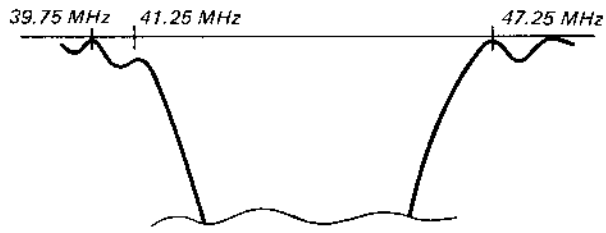



Fig. 3-3

**VIF Response Curve Adjustments**

1. Unsolder the VIF INPUT cable.
2. Connect a 250-k ohm rheostat across a resistor R326 as shown in Fig. 3-4.
3. Connect a VOM between the emitter of Q301 and grounding point as shown in Fig. 3-4.
4. Set the 250-k ohm rheostat to indicate 1.35 to 1.5 V on the VOM.

5. Disconnect the VOM.
6. Connect the VIF INPUT cable.
7. Connect a sweep generator and a marker generator to the tuner's test point as shown in Fig. 3-2.
8. Connect a scope to the VIF output terminals through a noise filter as shown in Fig. 3-1.
9. Set the marker generator to produce 44 MHz marker signal.
10. Adjust the output of sweep generator so that the 44 MHz marker on the VIF response curve indicates 15.5 Vp-p on the scope as shown in Fig. 3-5.
11. Make the adjustments specified in TABLE 3-2 to produce the VIF response curve as shown in Fig. 3-5.
12. Adjust the coil L207 in the tuner when satisfactory VIF response curve is not obtain by the foregoing Procedures.
13. Disconnect the sweep generator and scope.
14. Resolder the keying-pulse lead.

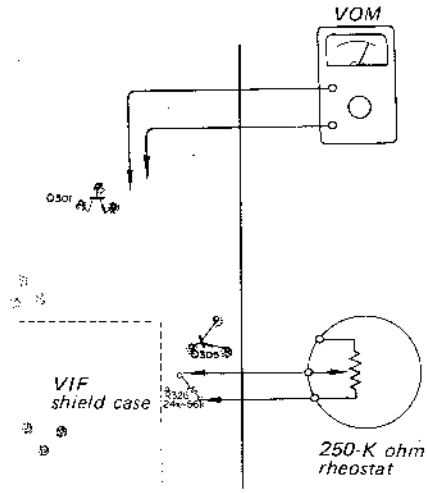



Fig. 3-4

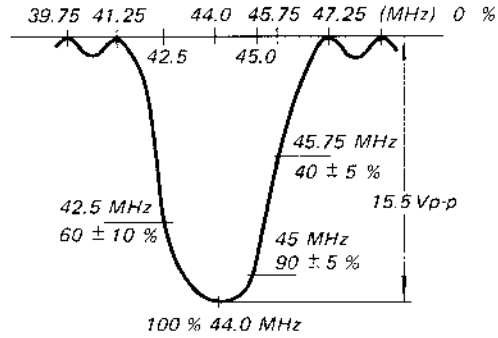



Fig. 3-5

TABLE 3-1. VIF TRAP ADJUSTMENTS

| *Marker Freq.* | *Adjust* | *Remarks* |
|---|---|---|
| 39.75 MHz | L303 | Adjust the coil for minimum indication on the scope. |
| 41.25 MHz | L301 | Same as above. |
| 47.25 MHz | L302 | Same as above. |

TABLE 3-2. VIF RESPONSE CURVE ADJUSTMENTS

| *Marker Freq.* | *Adjust* | *Remarks* |
|---|---|---|
| 44.0 MHz | T302 (pink core) | Adjust T302 for maximum distance between the marker point and baseline. |
| 44.0 MHz | T303 (blue core) | Adjust T303 for maximum distance between the marker point and baseline. |

## 3-2. SIF ADJUSTMENTS

**Equipment Required:**

Signal generator – 4.5 MHz with 1,000 Hz AM modulation
Sweep generator – covering the range 4 to 5 MHz
Marker generator – covering the range 4 to 5 MHz
Oscilloscope
Rheostat – 250-k ohm

**Procedure:**

1. Unsolder the VIF INPUT cable.
2. Connect the 250-k ohm rheostat across resistor R326 as shown in Fig. 3-4.
3. Set the 250-k ohm rheostat to make all video noise disappear from the screen of picture tube. (blank raster)
4. Connect a signal generator to the video-detector output as shown in Fig. 3-6.
5. Set the brightness control for optimum brightness and the contrast control fully clockwise position.
6. Adjust coil L402 for minimum 4.5 MHz stripes in the picture as shown in Fig. 3-7.
7. Disconnect the signal generator.
8. Connect a sweep generator to the video-detector output as shown in Fig. 3-6.
9. Loosely couple a marker generator to the output lead of the sweep generator.
10. Unsolder the SIF output cable.
11. Connect a dummy resistor (5-k ohm) across the input terminals of scope as shown in Fig. 3-8.
12. Connect a scope to the SIF output terminals (C420) as shown in Fig. 3-8, then make the adjustments specified in the following TABLE 3-3.

**TABLE 3-3. SIF ADJUSTMENTS**

| *Marker Freq.* | *Adjust* | *Remarks* |
|---|---|---|
| 4.5 MHz | T401<br>T402 | Turn up sweep output signal to produce an S curve. Adjust T401 and T402 for maximum deflection on the scope. |
| 4.5 MHz | T403<br>(pink core) | Turn the core to make the S curve symmetrical. |
| 4.5 MHz | T403<br>(blue core) | Turn the core to cross the baseline at 4.5 MHz on the S curve. |

**Note:** Repeat the above steps as necessary to produce the waveform as shown in Fig. 3-9.

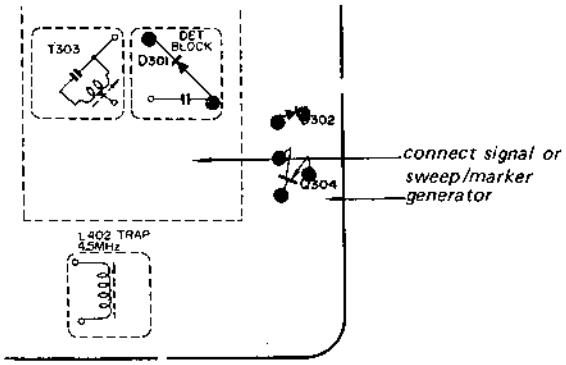



Fig. 3-6

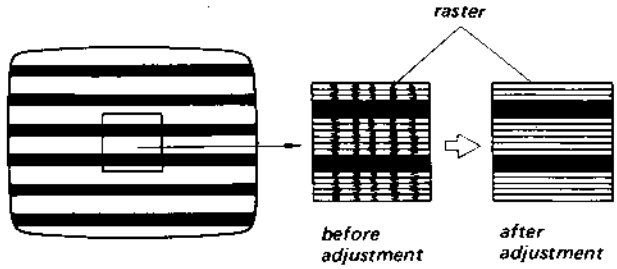



Fig. 3-7 4.5 MHz trap adjustment

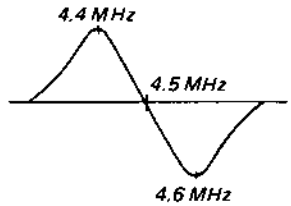



Fig. 3-9 SIF adjustment curve

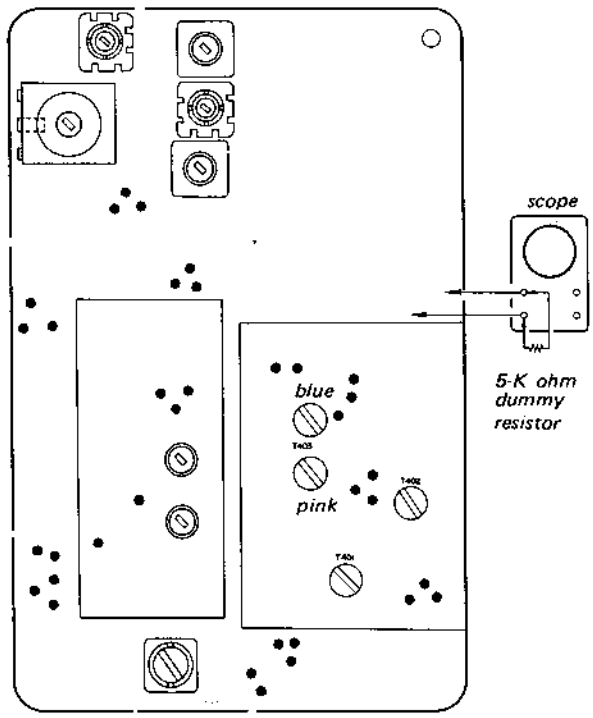



Fig. 3-8

### 3-3. DEFLECTION CIRCUIT ADJUSTMENTS

| *Step* | *Adjustment for* | *Preliminary Instruction* | *Equipment* | *Connection* | *Adjust* | *Remarks* |
|---|---|---|---|---|---|---|
| 1 | Collector current of Q501 (VIDEO OUT) | Set the tuner to an inactive channel. Check 12V and 50V (across C504) power supply. | VOM | Across R504 | R502 (43k - 68k) | For approx. 16 – 18 V reading. |
| 2 | Collector current of Q703 (VER OUT) | Adjust V and H hold controls for correct sync. Check 12V power supply. | VOM | Across R714 | R711 (1600 – 2200) | For approx. 0.32 – 0.33V reading. |
| 3 | Vert. Height and Linearity | Receive a test pattern. Check 12V power supply. | | | VR702 (Vert. Height) VR703 (Vert. Linearity) | For optimum vertical height and linearity on the picture. |
| 4 | Pulse width | Adjust V and H hold controls for correct sync. | scope | Emitter of Q801 | C804 (0.047 – 0.22 μF) | For 8.5 – 9.0V used in Fig. 3 – 10. |
| 5 | HSC (Hor. stabilizing coil) | Adjust V and H hold controls for correct sync. Receive a test pattern. | | | HSC | So that the picture is stable in either case whether HSC is shorted or normal. |
| 6 | Horizontal width | Adjust V and H hold controls for correct sync. Set the brightness control to optimum position. | scope | | C808 (0 – 0.015 μF) | For optimum picture width. |
| 7 | Focus | Same as above. Adjust V and H hold controls for correct sync. | | | VR801 (600k ohm) | To obtain best focus. |

*Waveform of Horizontal Oscillator Transistor Q801 (Emitter)*

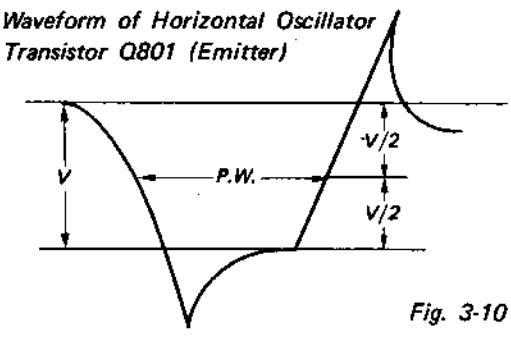
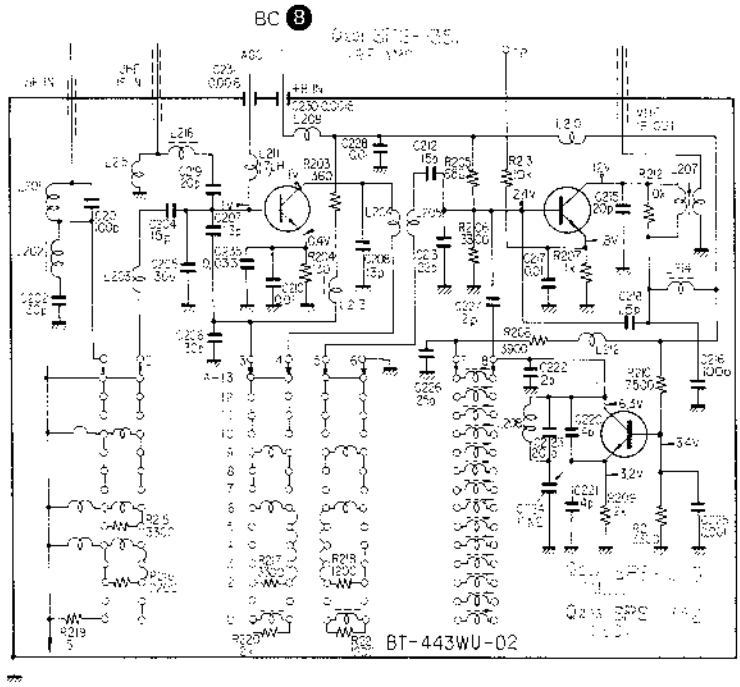



*Fig. 3-10*

# SECTION 4
# SCHEMATIC AND MOUNTING DIAGRAMS

## 4-1. VHF TUNER

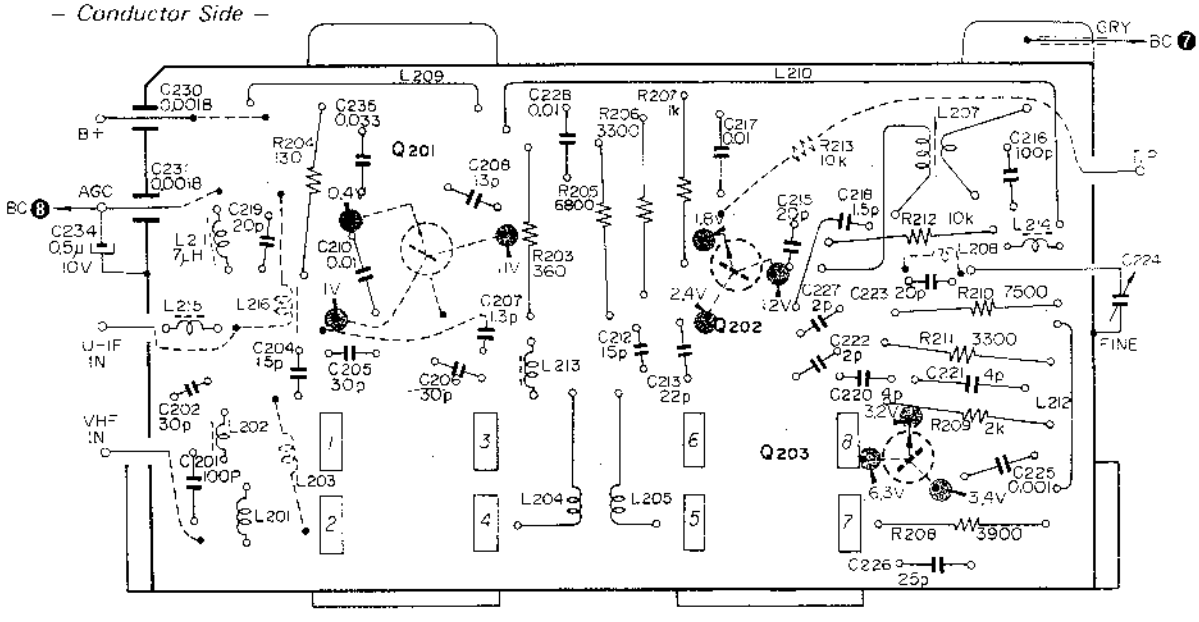
### SCHEMATIC DIAGRAM




## 4-2. VHF TUNER

### MOUNTING DIAGRAM

*– Conductor Side –*

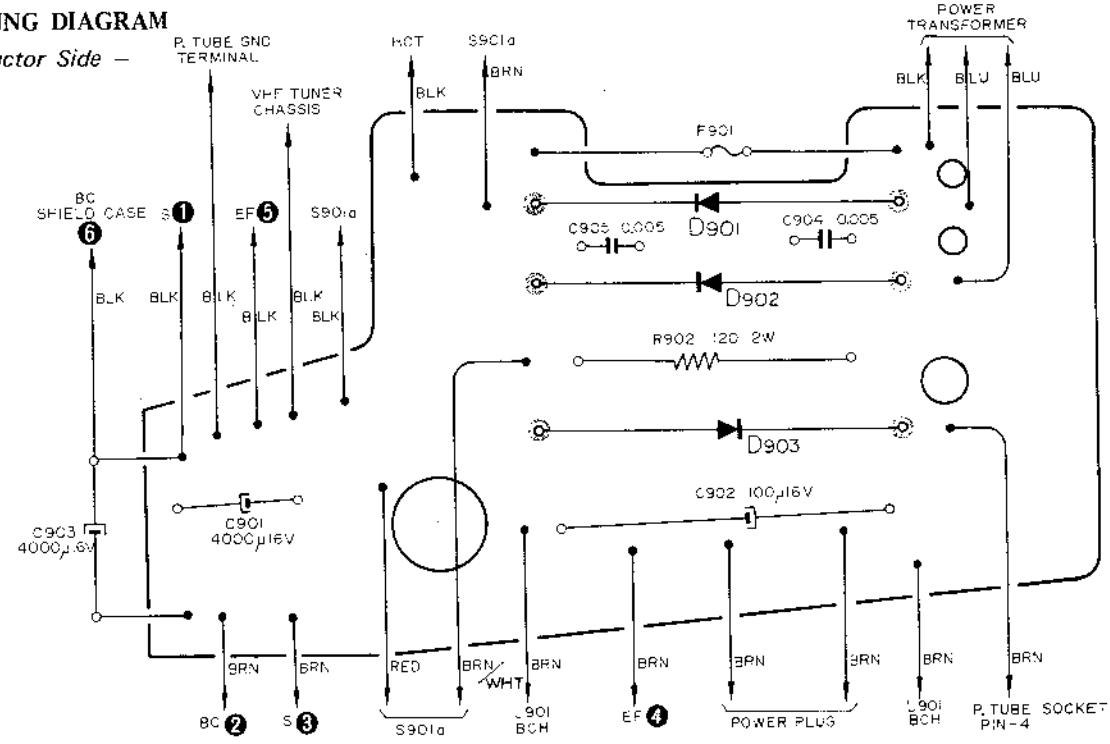



**Note:**

1. Voltages measured from chassis to point indicated with a VOM (20k ohm/V) with no signal input.
2. The components are subject to change without notice.
3. The following components are mounted on the conductor side.
   (Q201, Q202, Q203, L202, L203, L208, L211, L216, R213, C207)

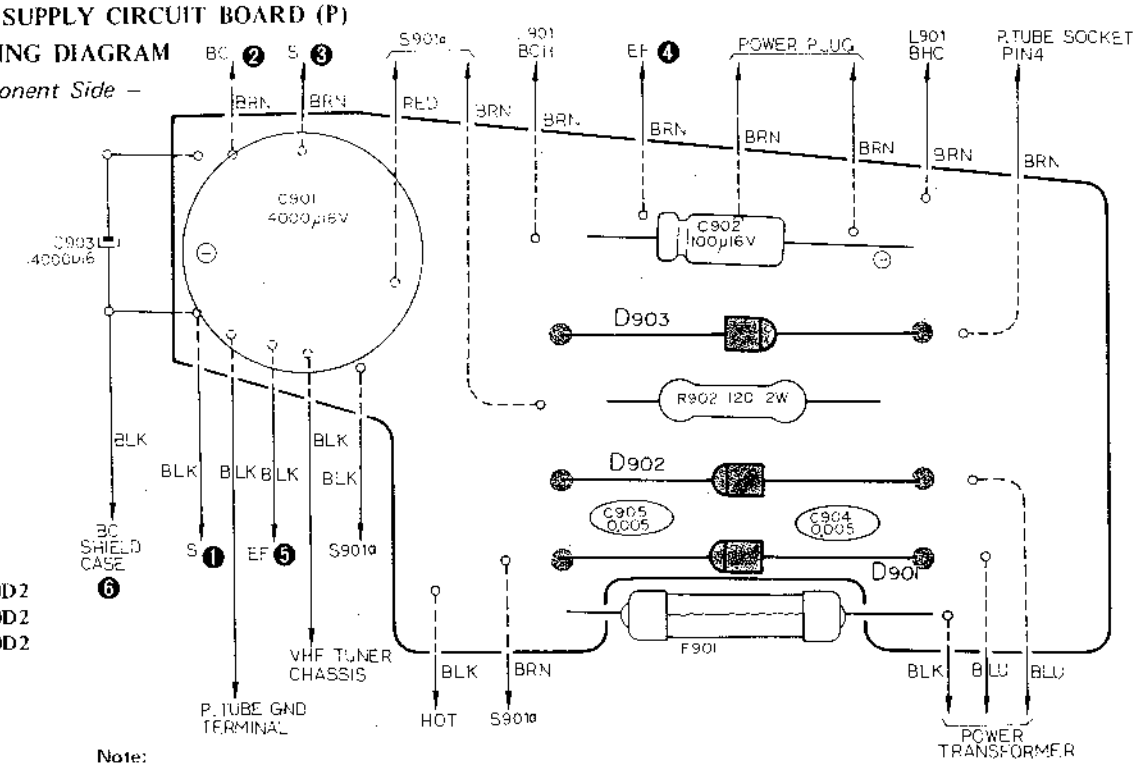
## 4-3. POWER SUPPLY CIRCUIT BOARD (P) MOUNTING DIAGRAM

*– Conductor Side –*




## 4-4. POWER SUPPLY CIRCUIT BOARD (P) MOUNTING DIAGRAM

*– Component Side –*




**DIODES**

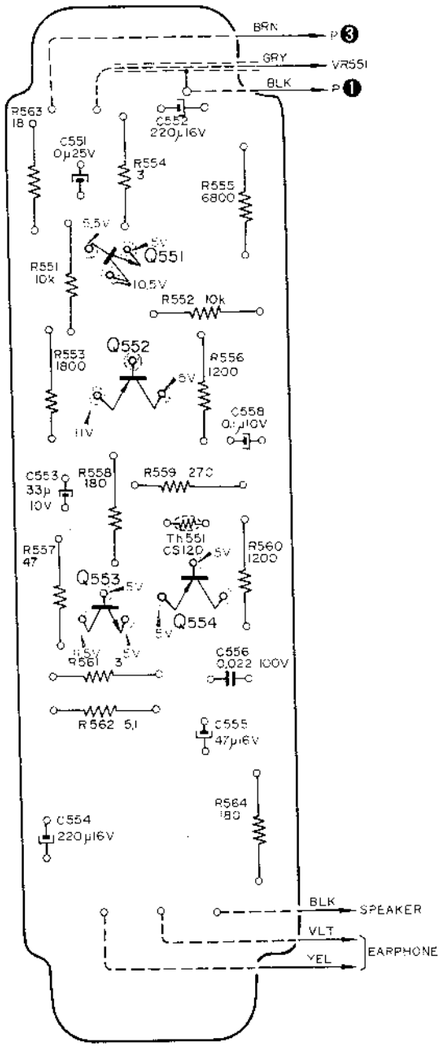
| | |
|---|---|
| D901 | 10D2 |
| D902 | 10D2 |
| D903 | 10D2 |

Note:

1. All capacitors are 50WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. Voltages measured from chassis to point indicated with a VOM (20k ohm/V) with no signal input.
4. The components are subject to change without notice.
5. White lettering numbers in the black circle indicate the lead connecting points, and alphabet marks indicate the printed circuit board.
   Example: BC ❷ ; Connect to the number 2 of BC board.

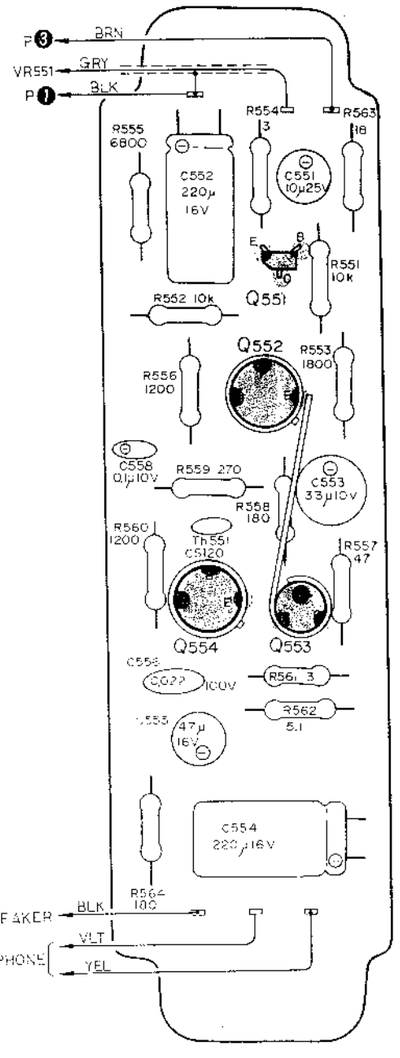
## 4-5. SOUND CIRCUIT BOARD (S) MOUNTING DIAGRAM

*– Conductor Side –*




## 4-6. SOUND CIRCUIT BOARD (S) MOUNTING DIAGRAM

*– Component Side –*




### TRANSISTORS

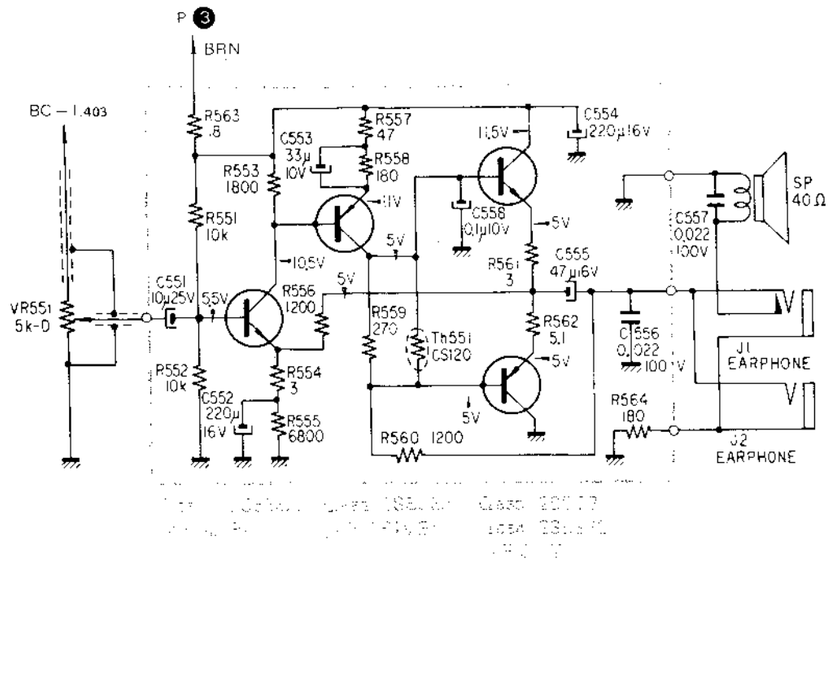
| | |
|---|---|
| Q551 | 2SC633A |
| Q552 | 2SB383 |
| Q553 | 2SD72 |
| Q554 | 2SB382 |

**Note:**

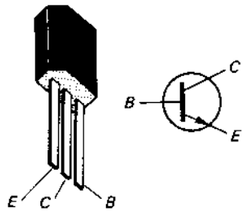
1. All capacitors are 50WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. Voltages measured from chassis to point indicated with a VOM (20k ohm/V) with no signal input.
4. The components are subject to change without notice.
5. White lettering numbers in the black circle indicate the lead connecting points, and alphabet marks indicate the printed circuit board.
   Example: P ❶ ; Connect to the number 1 of P board.



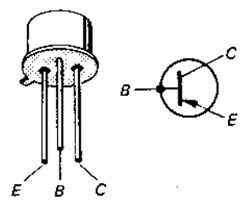
## 4-7. SOUND CIRCUIT BOARD (S) SCHEMATIC DIAGRAM



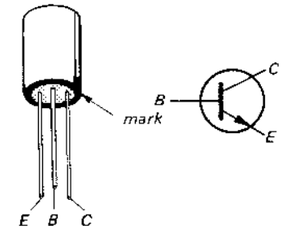

**Q551** 2SC633A




**Q552** 2SB383
**Q554** 2SB382

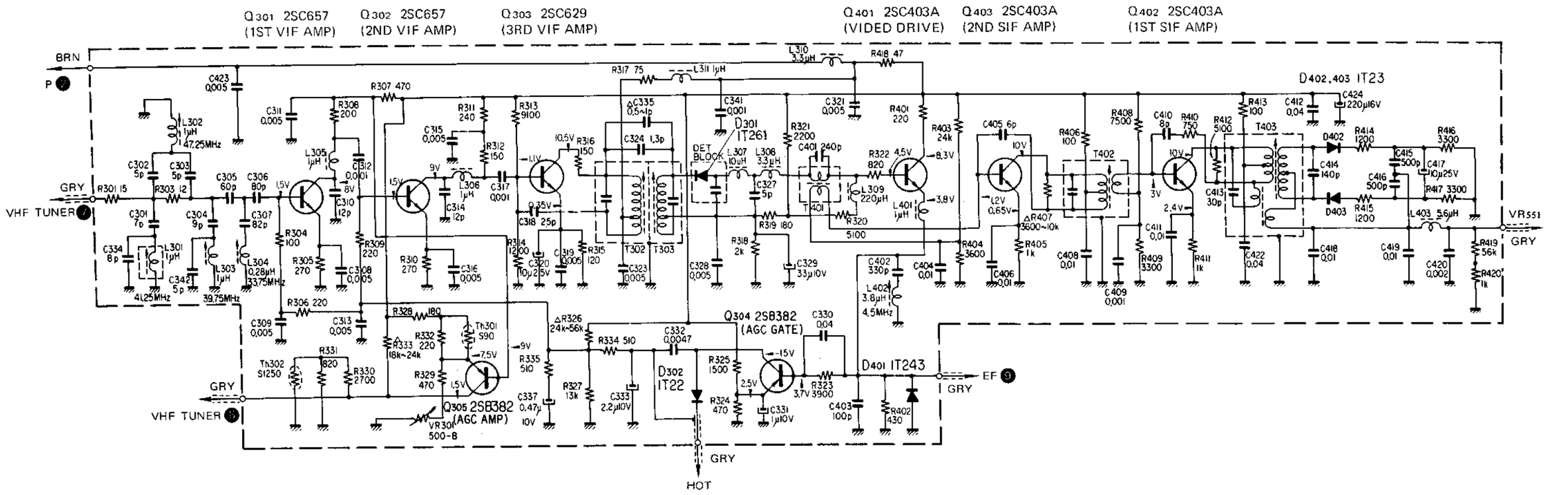



**Q553** 2SD72



## 4-8. SIGNAL CIRCUIT BOARD (BC)

### SCHEMATIC DIAGRAM




**Note:**

1. All capacitors are 50WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. Voltages measured from chassis to point indicated with a VOM (20k ohm/V) with no signal input.
4. The components are subject to change without notice.

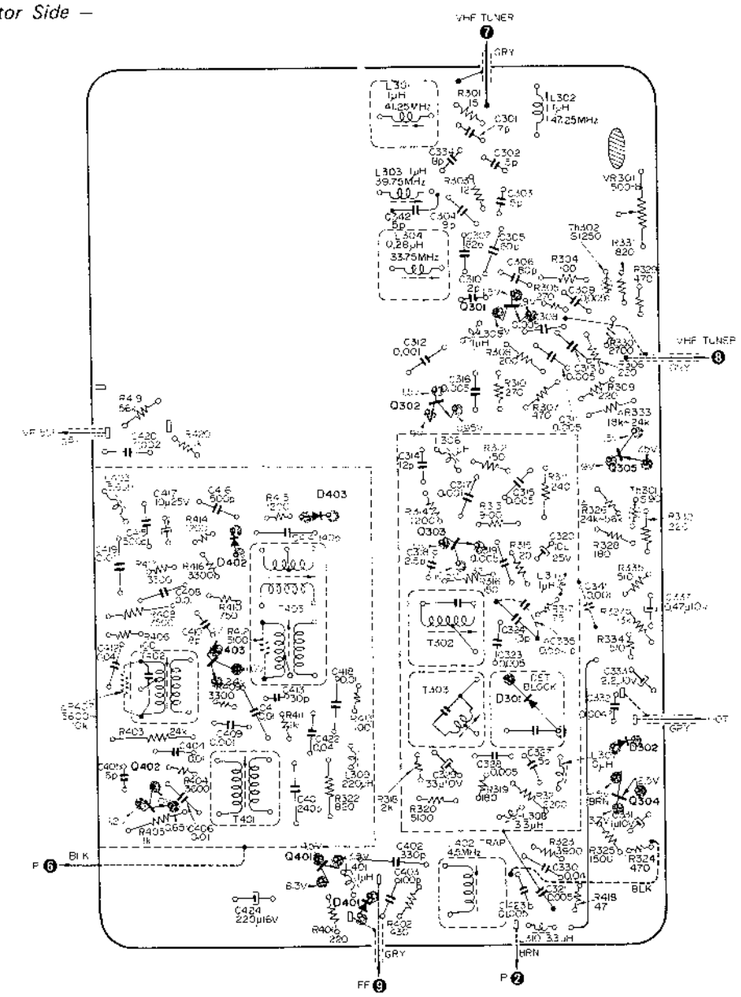
**TRANSISTORS**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Q301 | 2SC657 | Q401 | 2SC403A | D301 | 1T261 | D401 | 1T243 |
| Q302 | 2SC657 | Q402 | 2SC403A | D302 | 1T22 | D402 | 1T23 |
| Q303 | 2SC629 | Q403 | 2SC403A | | | D403 | 1T23 |
| Q304 | 2SB382 | | | | | | |
| Q305 | 2SB382 | | | | | | |

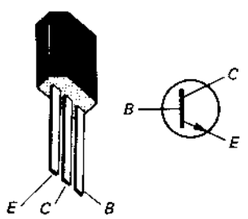
**DIODES**

## 4-9. SIGNAL CIRCUIT BOARD (BC) MOUNTING DIAGRAM

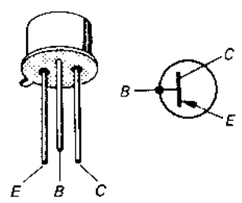
*– Conductor Side –*



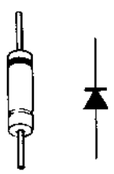

**Q301, Q302, Q303**
**Q401, Q402, Q403**




**Q304, Q305**



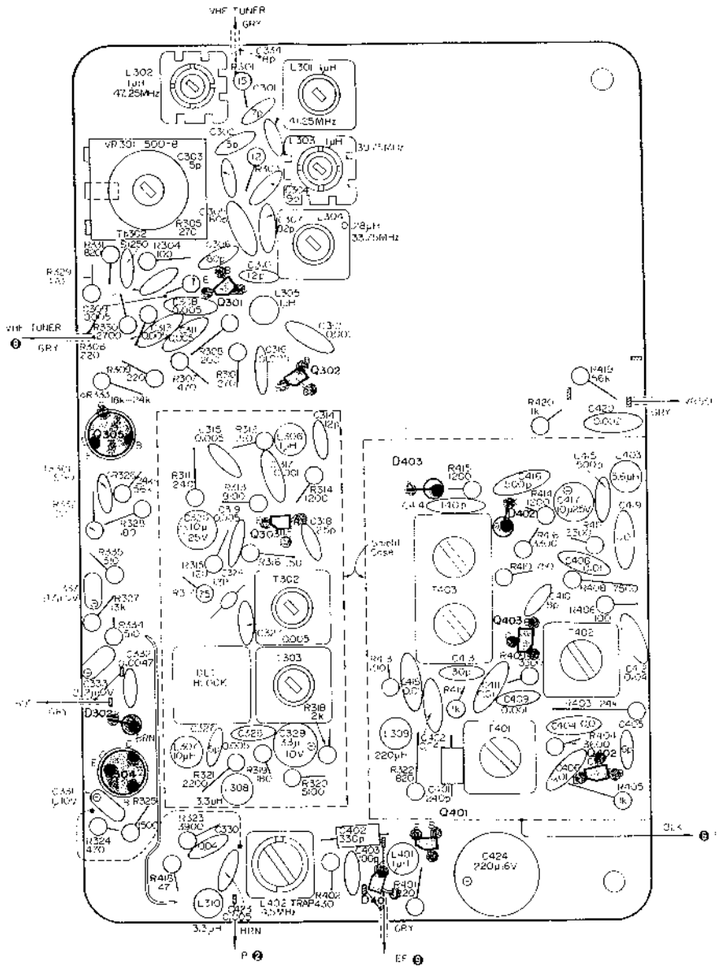

**D301, D302, D401, D402, D403**





## 4-10. SIGNAL CIRCUIT BOARD (BC) MOUNTING DIAGRAM

*– Component Side –*




**TRANSISTORS**

| | | | | | |
|---|---|---|---|---|---|
| Q301 | 2SC657 | Q401 | 2SC403A | D301 | 1T261 |
| Q302 | 2SC657 | Q402 | 2SC403A | D302 | 1T22 |
| Q303 | 2SC629 | Q403 | 2SC403A | | |
| Q304 | 2SB382 | | | | |
| Q305 | 2SB382 | | | | |

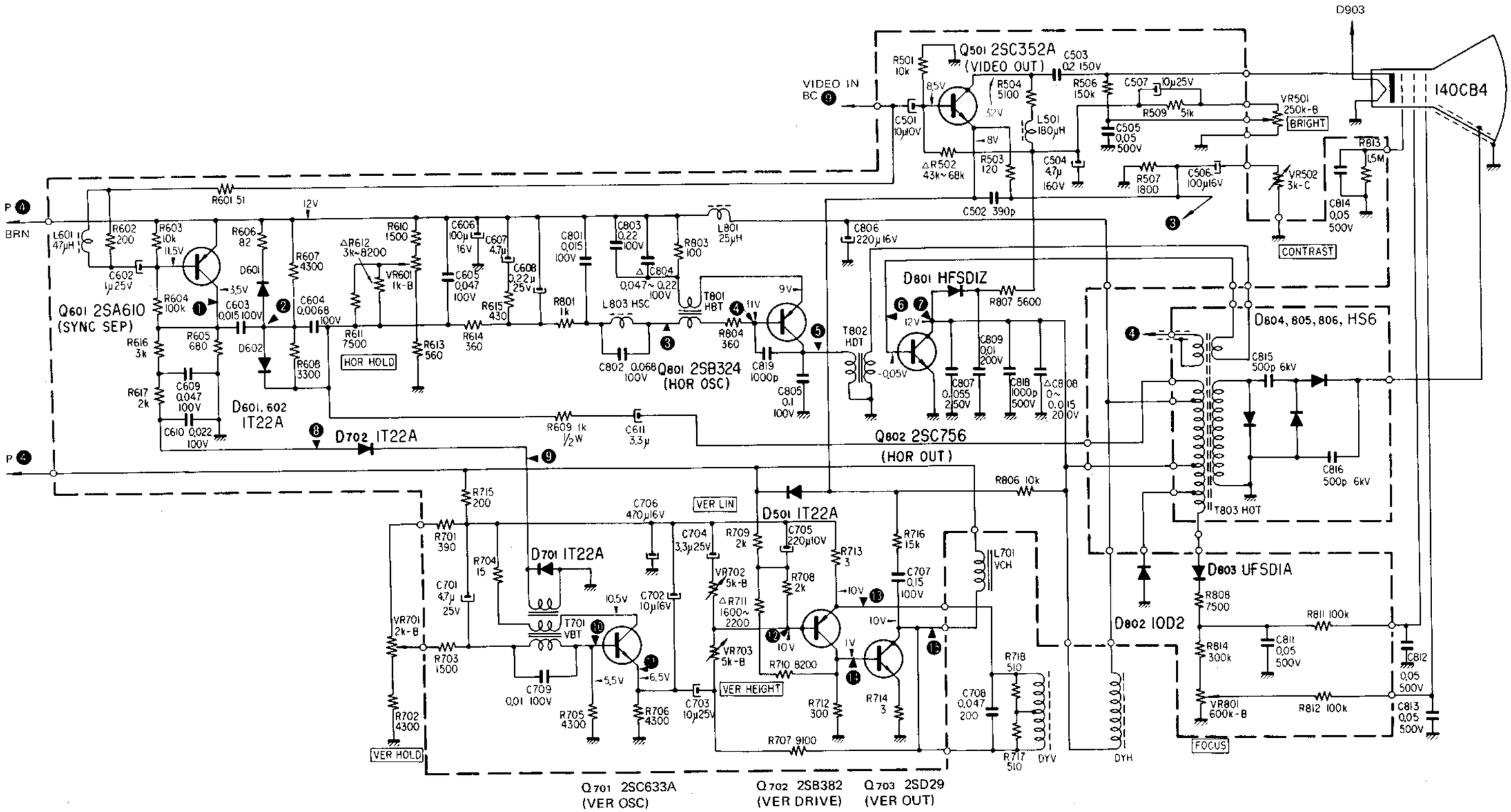
**DIODES**

| | | | |
|---|---|---|---|
| D401 | 1T243 |
| D402 | 1T23 |
| D403 | 1T23 |

**Note:**

1. All capacitors are 50 WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. Voltages measured from chassis to point indicated with a VOM (20k ohm/V) with no signal input.
4. The components are subject to change without notice.
5. White lettering numbers in the black circle indicate the lead connecting points, and alphabet marks indicate the printed circuit board.
   Example: P 6 ; Connect to the number 6 of P board.
6. The following components are mounted on the conductor side.
   (L311, C321, C335, C341, C342, R407, R412)

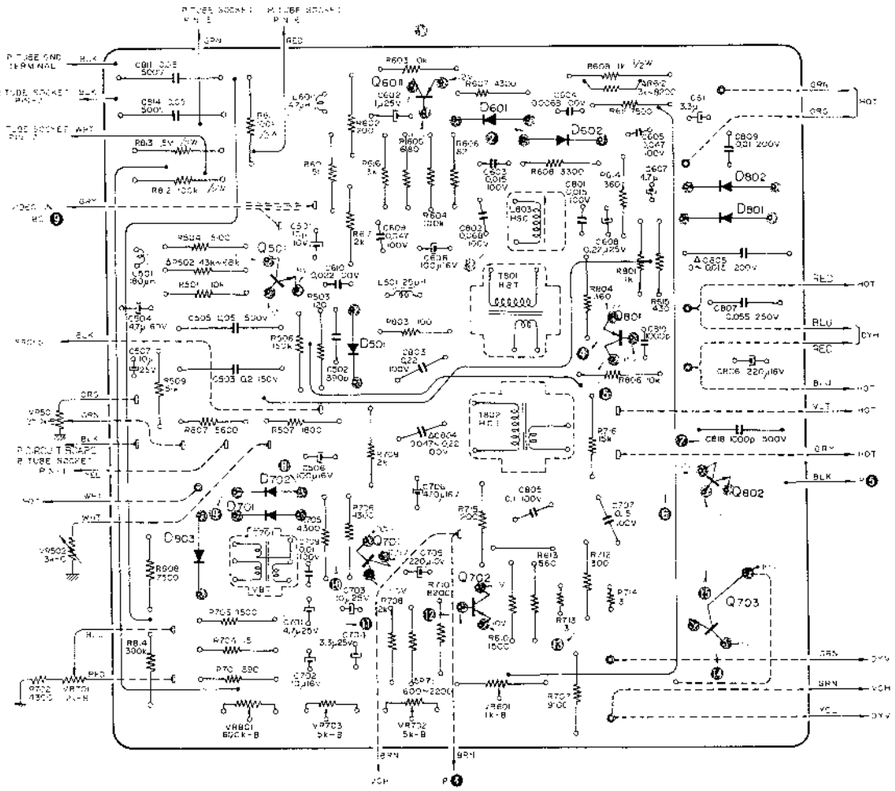
## 4-11. DEFLECTION CIRCUIT BOARD (EF)
### SCHEMATIC DIAGRAM



## 4-12. DEFLECTION CIRCUIT BOARD (EF)

### MOUNTING DIAGRAM

*— Conductor Side —*



### TRANSISTORS

| | | | |
|---|---|---|---|
| Q501 | 2SC352A | Q801 | 2SB324 |
| | | Q802 | 2SC756 |
| Q601 | 2SA610 | | |
| Q701 | 2SC633A | | |
| Q702 | 2SB382 | | |
| Q703 | 2SD29 | | |

### DIODES

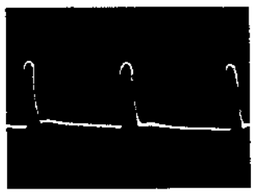
| | | | |
|---|---|---|---|
| D501 | 1T22A | D701 | 1T22A |
| | | D702 | 1T22A |
| D601 | 1T22A | | |
| D602 | 1T22A | | |
| | | D801 | HFSD1Z |
| | | D802 | 10D2 |
| | | D803 | UFSD1A |

**Note:**

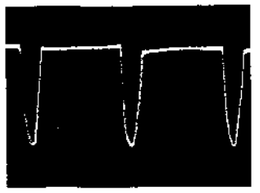
1. All capacitors are 50WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. Voltages measured from chassis to point indicated with a VOM (20k ohm/V) with no signal input.
4. The components are subject to change without notice.
5. White lettering numbers in the black circle indicate the lead connecting points, and alphabet marks indicate the printed circuit board.
   Example: BC ❾ ; Connect to the number 9 of BC board.
6. The red circled numbers ( ❶ ~ ⓯ ) are shown in waveforms numbers.



## 4-13. WAVEFORMS

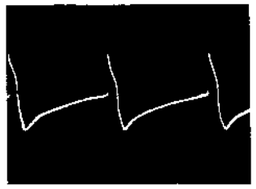


❶ Collector of Q601
11Vp-p (H.)

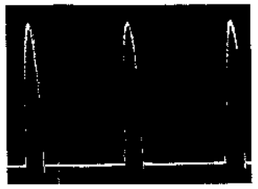


❻ Base of Q802
6.4Vp-p (H.)

⓫ Emitter of Q701
3.2Vp-p (V.)



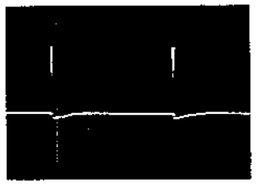
❷ Anode of D601
12Vp-p (H.)



❼ Collector of Q802
88Vp-p (H.)

⓬ Base of Q702
1.4Vp-p (V.)

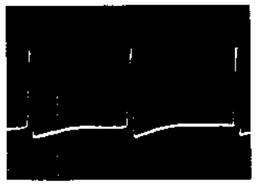
❸ Right side of HSC
7.0Vp-p (H.)



❽ Anode of D702
5.5Vp-p (V.)

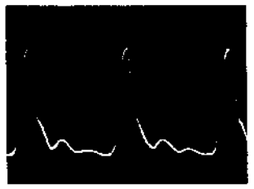
⓭ Emitter of Q702
1.4Vp-p (V.)

❹ Base of Q801
6.4Vp-p (H.)



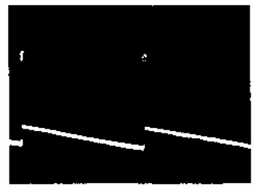
❾ Cathode of D702
12Vp-p (V.)

⓮ Collector of Q702
1.2Vp-p (V.)



❺ Collector of Q801
6.8Vp-p (H.)

❿ Base of Q701
5.0Vp-p (V.)

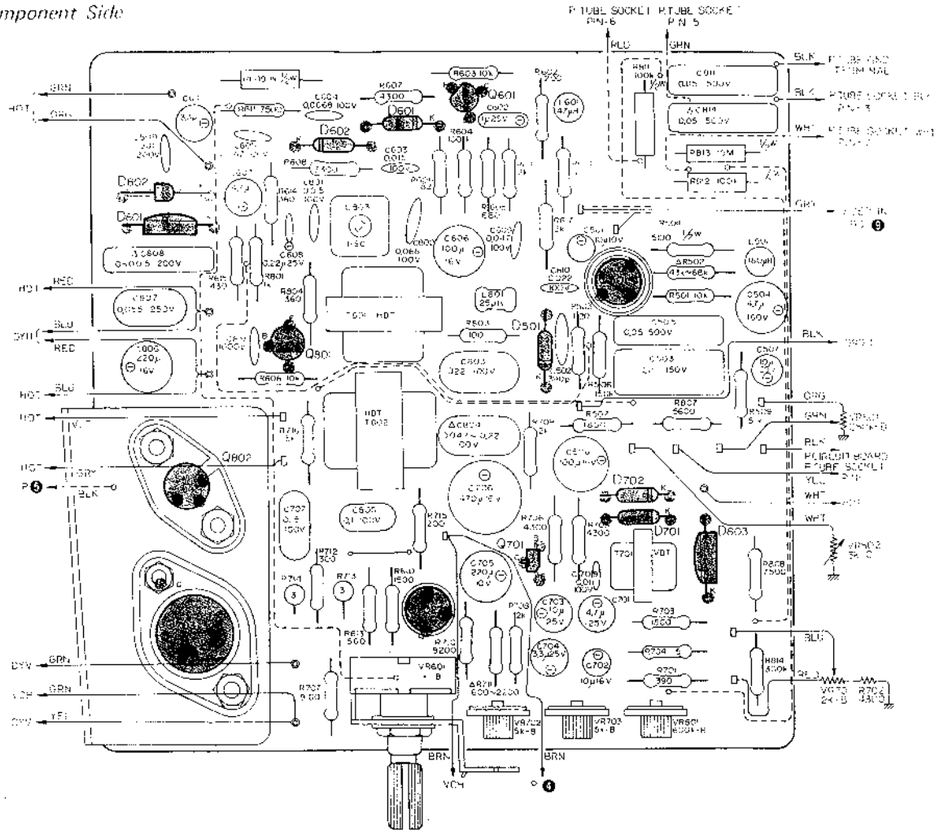


⓯ Collector of Q703
58Vp-p (V.)

## 4-14. DEFLECTION CIRCUIT BOARD (EF)

### MOUNTING DIAGRAM

*— Component Side*



### TRANSISTORS

| | | | |
|---|---|---|---|
| Q501 | 2SC352A | Q801 | 2SB324 |
| | | Q802 | 2SC756 |
| Q601 | 2SA610 | | |
| Q701 | 2SC633A | | |
| Q702 | 2SB382 | | |
| Q703 | 2SD29 | | |

### DIODES

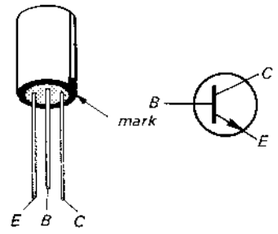
| | | | |
|---|---|---|---|
| D501 | 1T22A | D701 | 1T22A |
| | | D702 | 1T22A |
| D601 | 1T22A | | |
| D602 | 1T22A | D801 | HFSD1Z |
| | | D802 | 10D2 |
| | | D803 | UFSD1A |

**Note:**

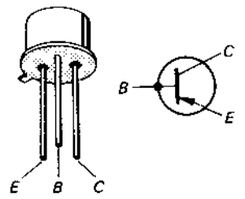
1. All capacitors are 50WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. Voltages measured from chassis to point indicated with a VOM (20k ohm/V) with no signal input.
4. The components are subject to change without notice.
5. White lettering numbers in the black circle indicate the lead connection points, and alphabet marks indicate the printed circuit board.
   Example: BC ❾ ; Connect to the number 9 of BC board.
6. The following component is mounted on the conductor side.
   (R102)



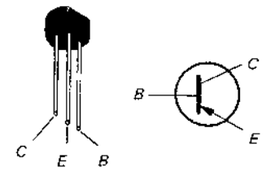
Q501
2SC352A



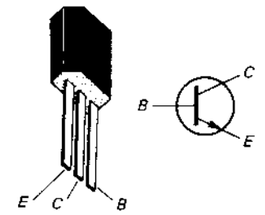

Q702
2SB382



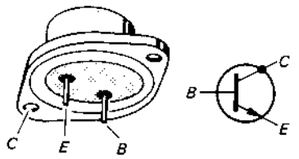

Q601
2SA610



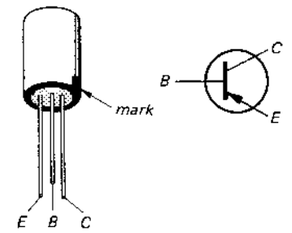

Q701
2SC633A



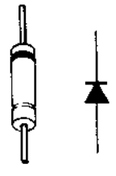

Q703
2SD29



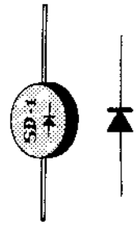

Q801
2SB324



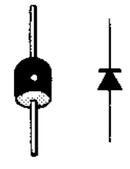

D501, D601
D602, D701,
D702
1T22A



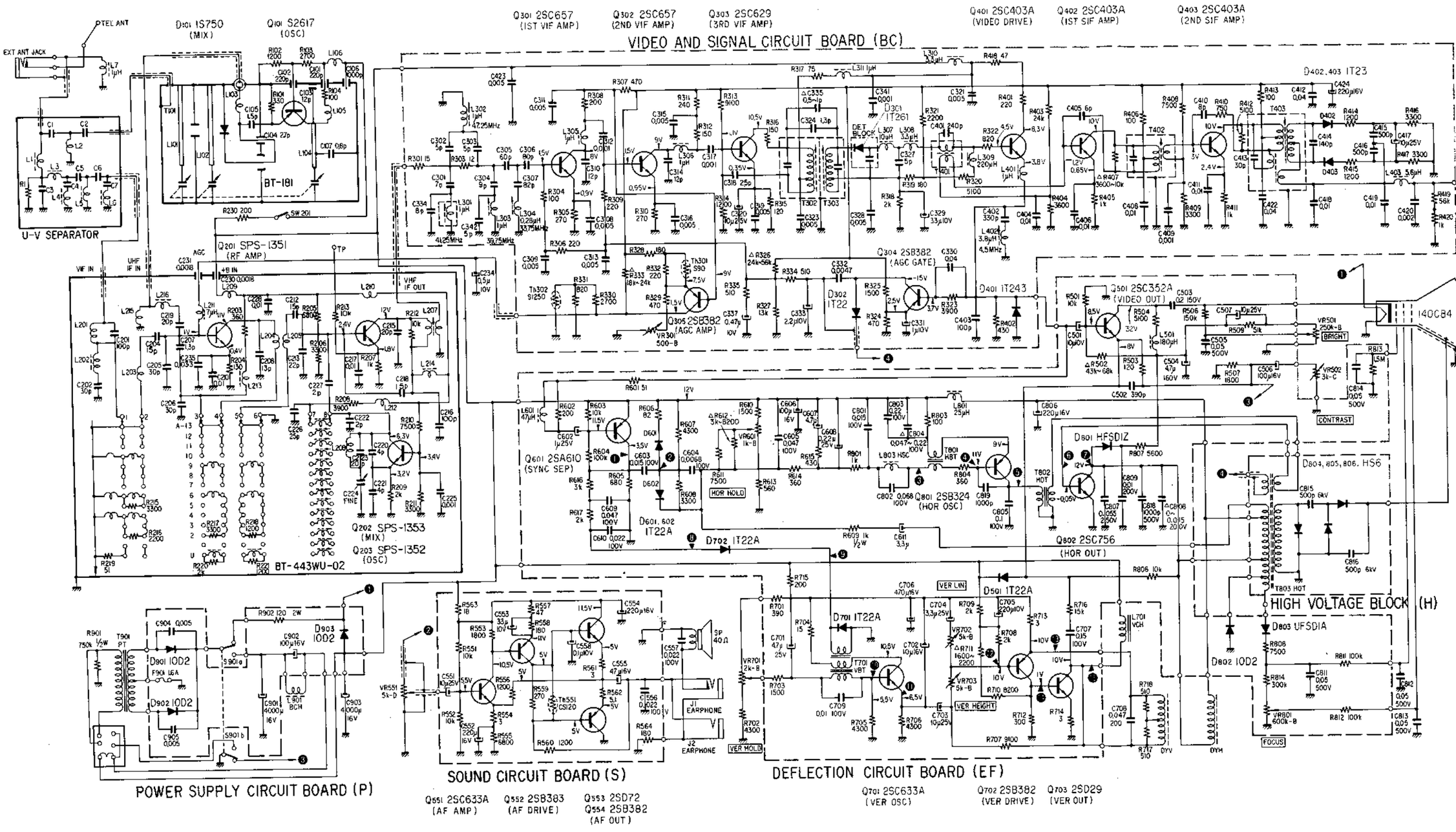
D801 HFSD1Z
D803 UFSD1A



D802
10D2



## 4-15. SCHEMATIC DIAGRAM

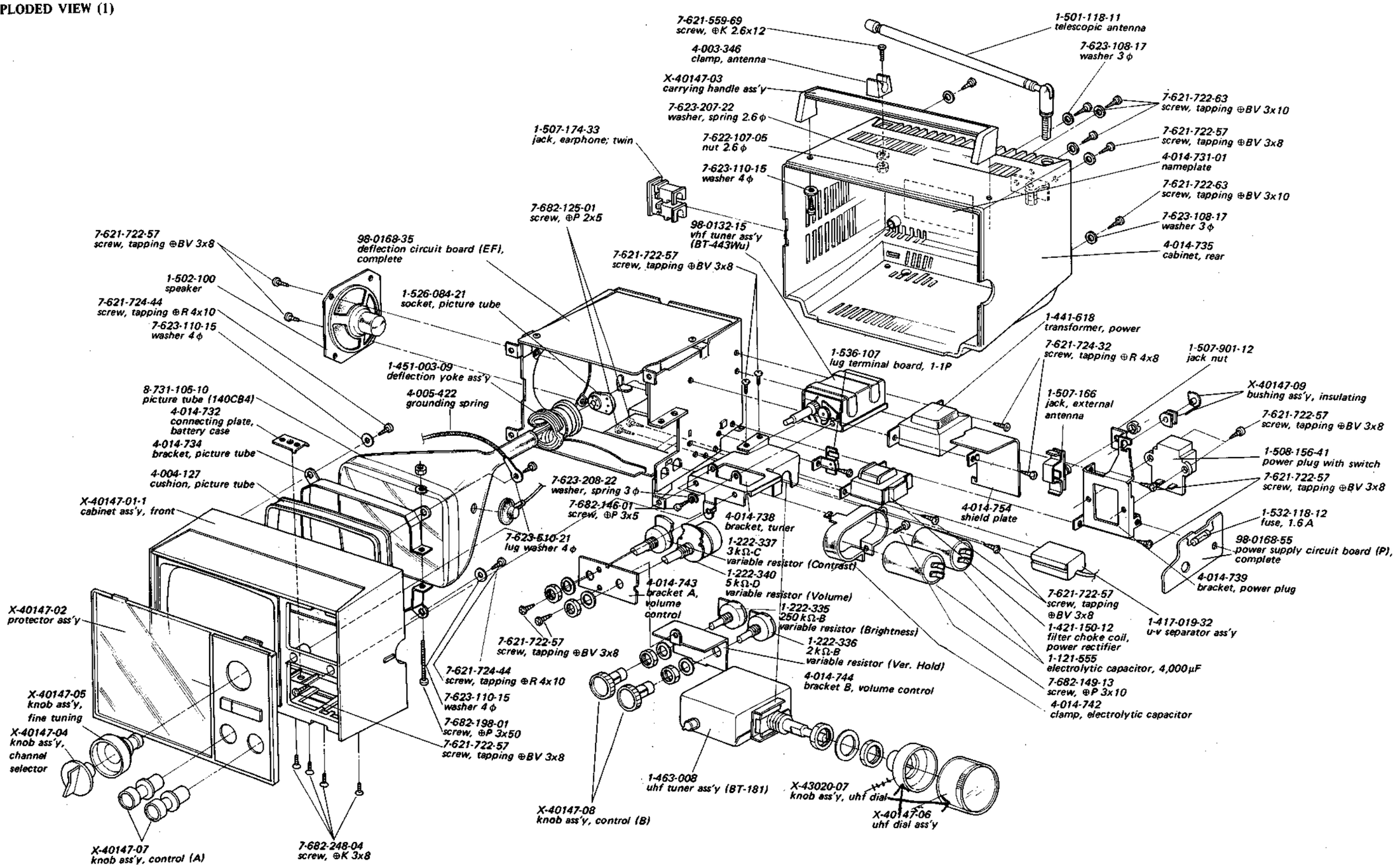



**Note:**

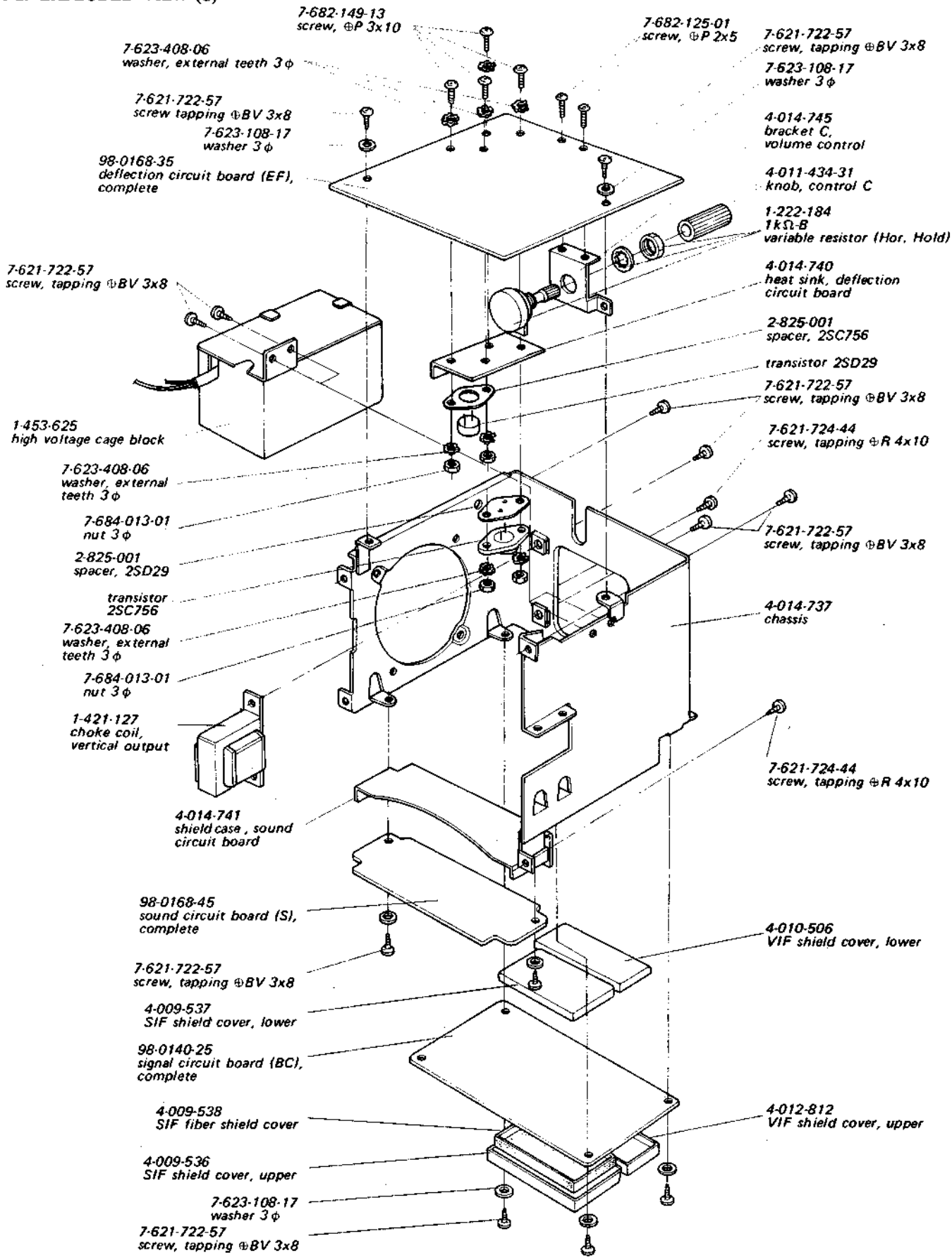
1. All capacitors are 50WV unless otherwise specified.
2. All resistors are ¼W unless otherwise specified.
3. Resistance and capacitance values marked △ are to be selected to yield specified operating conditions.
4. Voltages measured from chassis to point indicated with a VOM (20k ohm/V) with no signal input.
5. The components are subject to change without notice.

# SECTION 5
# EXPLODED VIEW AND PACKING

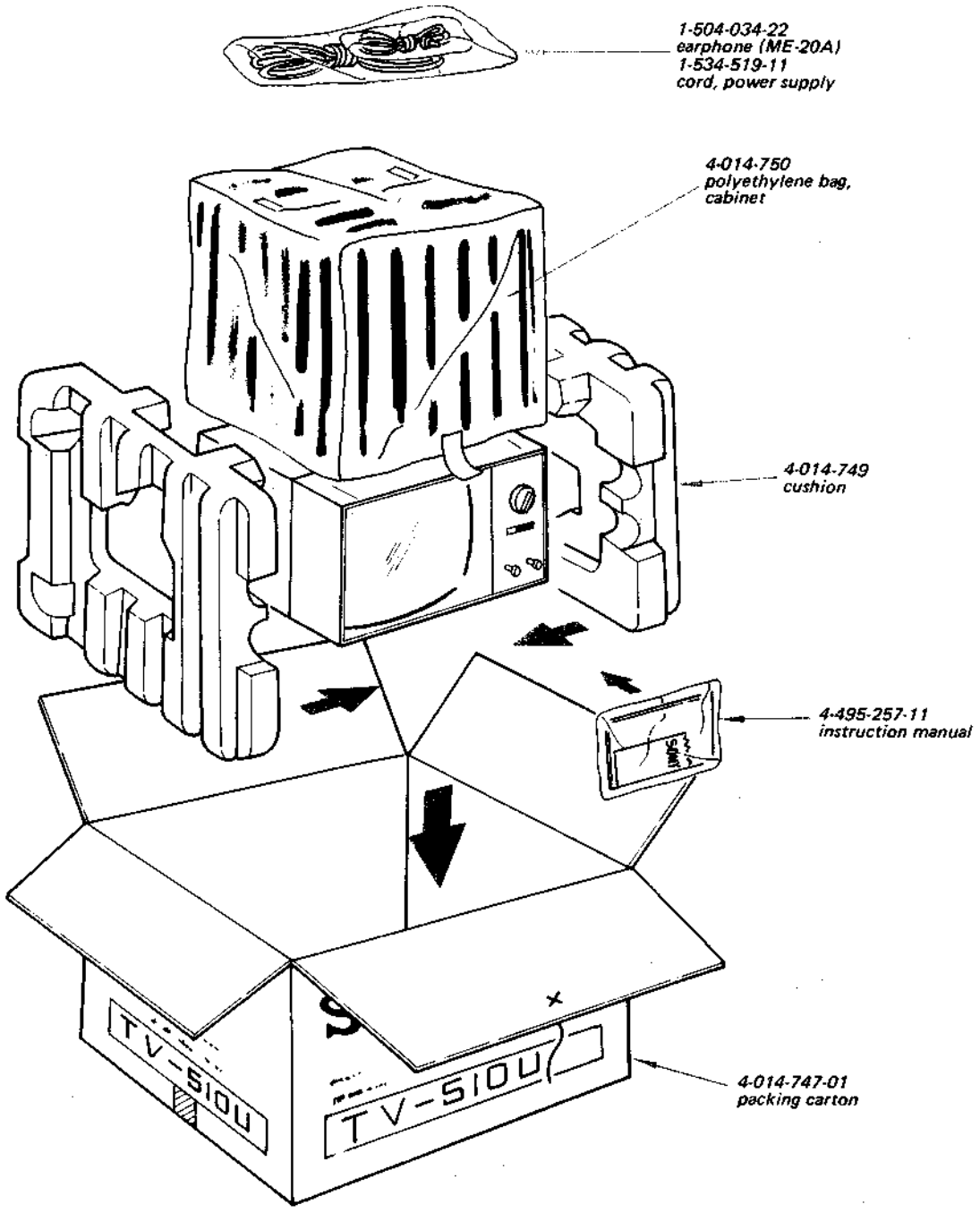
## 5-1. EXPLODED VIEW (1)



## 5-2. EXPLODED VIEW (2)



## 5-3. PACKING


1-504-034-22
earphone (ME-20A)
1-534-519-11
cord, power supply
4-014-750
polyethylene bag,
cabinet
4-014-749
cushion
4-495-257-11
instruction manual
4-014-747-01
packing carton
TV-510U
TV-510U

# SECTION 6
# ELECTRICAL PARTS LIST

| Ref. No. | Part No. | Description |
|---|---|---|
| | | **GENERAL** |
| | 98-0132-15 | VHF tuner ass'y (BT-443Wu) |
| | 1-463-008 | UHF tuner ass'y (BT-181) |
| | 98-0140-25 | signal circuit board (BC), complete |
| | 98-0168-35 | deflection circuit board (EF), complete |
| | 98-0168-45 | sound circuit board (S), complete |
| | 98-0168-55 | power supply circuit board (P), complete |
| | | **SEMICONDUCTORS** |
| Q301 | | transistor 2SC657 |
| Q302 | | transistor 2SC657 |
| Q303 | | transistor 2SC629 |
| Q304 | | transistor 2SB382 |
| Q305 | | transistor 2SB382 |
| Q401 | | transistor 2SC403A |
| Q402 | | transistor 2SC403A |
| Q403 | | transistor 2SC403A |
| Q501 | | transistor 2SC352A |
| Q551 | | transistor 2SC633A |
| Q552 | | transistor 2SB383 |
| Q553 | | transistor 2SD72 |
| Q554 | | transistor 2SB382 |
| Q601 | | transistor 2SA610 |
| Q701 | | transistor 2SC633A |
| Q702 | | transistor 2SB382 |
| Q703 | | transistor 2SD29 |
| Q801 | | transistor 2SB324 |
| Q802 | | transistor 2SC756 |
| D301 | | diode IT261 |
| D302 | | diode IT22 |
| D401 | | diode IT243 |
| D402 | | diode IT23 |
| D403 | | diode IT23 |
| D501 | | diode IT22A |
| D601 | | diode IT22A |
| D602 | | diode IT22A |
| D701 | | diode IT22A |
| D702 | | diode IT22A |
| D801 | | diode HFSD1Z |
| D802 | | diode 10D2 |
| D803 | | diode UFSD1A |

| Ref. No. | Part No. | Description |
|---|---|---|
| D901 | | diode 10D2 |
| D902 | | diode 10D2 |
| D903 | | diode 10D2 |
| Th301 | 8-690-003-00 | thermistor S90 |
| Th302 | 8-690-006-00 | thermistor S1250 |
| Th551 | 8-691-001 | thermistor CS-120 |
| | | **COILS** |
| L7 | 1-407-178 | 1 μH micro inductor |
| L301 | 1-409-160-31 | 41.25 MHz trap coil |
| L302 | 1-409-160-21 | 47.25 MHz trap coil |
| L303 | 1-409-160-21 | 39.75 MHz trap coil |
| L304 | 1-409-170-11 | 33.75 MHz trap coil |
| L305 | 1-407-178 | 1 μH micro inductor |
| L306 | 1-407-178 | 1 μH micro inductor |
| L307 | 1-407-157 | 10 μH micro inductor |
| L308 | 1-407-184 | 3.3 μH micro inductor |
| L309 | 1-407-173 | 220 μH micro inductor |
| L310 | 1-407-184 | 3.3 μH micro inductor |
| L311 | 1-407-178 | 1 μH micro inductor |
| L401 | 1-407-178 | 1 μH micro inductor |
| L402 | 1-409-036-11 | 4.5 MHz trap coil |
| L403 | 1-407-187 | 5.6 μH micro inductor |
| L501 | 1-407-172 | 180 μH micro inductor |
| L601 | 1-407-165 | 47 μH micro inductor |
| L701 | 1-421-127 | choke coil, vertical output |
| L801 | 1-421-013-11 | 25 μH filter inductor |
| L803 | 1-413-012-12 | coil, horizontal stabilizing |
| L901 | 1-421-150-12 | filter choke coil, power rectifier |
| | | **TRANSFORMERS** |
| T302 | 1-403-701 | VIFT |
| T303 | 1-403-702 | VIFT |
| T401 | 1-403-348 | SIFT |
| T402 | 1-403-349 | SIFT |
| T403 | 1-403-313 | SIFT |
| T701 | 1-435-008-12 | transformer, vertical osc; VBT |
| | 1-435-008-11 | transformer, vertical osc; VBT |
| T801 | 1-435-016-11 | transformer, horizontal osc; HBT |
| T802 | 1-437-004-11 | transformer, horizontal drive; HDT |
| T803 | 1-453-625 | high voltage cage block; HOT |
| T901 | 1-441-618 | transformer, power; PT |

| Ref. No. | Part No. | Description |
|---|---|---|
| | | **CAPACITORS** |
| C301 | 1-101-957 | 7pF ±0.5pF 50WV ceramic |
| C302 | 1-101-969 | 5pF ±0.5% 50WV ceramic |
| C303 | 1-101-969 | 5pF ±0.5% 50WV ceramic |
| C304 | 1-101-832 | 9pF ±0.2pF 50WV ceramic |
| C305 | 1-101-583 | 60pF ±5% 50WV ceramic |
| C306 | 1-101-057 | 80pF ±5% 50WV ceramic |
| C307 | 1-101-892 | 82pF ±5% 50WV ceramic |
| C308 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C309 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C310 | 1-101-961 | 12pF ±5% 50WV ceramic |
| C311 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C312 | 1-101-455 | 0.001μF ±20% 50WV ceramic |
| C313 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C314 | 1-101-961 | 12pF ±5% 50WV ceramic |
| C315 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C316 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C317 | 1-101-455 | 0.001μF ±20% 50WV ceramic |
| C318 | 1-101-940 | 2.5pF ±10% 50WV ceramic |
| C319 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C320 | 1-121-398 | 10μF $\pm^{100}_{0}$% 25WV electrolytic |
| C321 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C323 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C324 | 1-101-587 | 1.3pF ±0.2pF 50WV ceramic |
| C327 | 1-101-955 | 5pF ±0.5pF 50WV ceramic |
| C328 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C329 | 1-121-402 | 33μF $\pm^{100}_{0}$% 10WV electrolytic |
| C330 | 1-101-006 | 0.04μF $\pm^{100}_{0}$% 50WV ceramic |
| C331 | 1-127-023 | 1μF ±20% 10WV aluminum electrolytic |
| C332 | 1-105-669-12 | 0.0047μF ±10% 50WV mylar |
| C333 | 1-127-024 | 2.2μF ±20% 10WV aluminum electrolytic |
| C334 | 1-101-958 | 8pF ±0.5pF 50WV ceramic |
| ※ C335 | 1-101-837 | 0.5pF ±0.2pF 50WV ceramic |
| | 1-101-586 | 0.8pF ±0.2pF 50WV ceramic |
| | 1-101-163 | 1pF ±20% 50WV ceramic |
| C337 | 1-127-022 | 0.47μF ±20% 10WV aluminum electrolytic |
| C341 | 1-101-455 | 0.001μF ±20% 50WV ceramic |
| C342 | 1-101-969 | 5pF ±0.5pF 50WV ceramic |
| C401 | 1-103-610 | 240pF ±5% 50WV polystyrene |
| C402 | 1-103-663 | 330pF ±10% 50WV polystyrene |
| C403 | 1-101-896 | 100pF ±5% 50WV ceramic |
| C404 | 1-101-004 | 0.01μF $\pm^{100}_{0}$% 50WV ceramic |
| C405 | 1-101-956 | 6pF ±0.5pF 50WV ceramic |
| C406 | 1-101-004 | 0.01μF $\pm^{100}_{0}$% 50WV ceramic |
| C408 | 1-101-004 | 0.01μF $\pm^{100}_{0}$% 50WV ceramic |
| C409 | 1-101-455 | 0.001μF ±20% 50WV ceramic |
| C410 | 1-101-958 | 8pF ±5pF 50WV ceramic |
| C411 | 1-101-004 | 0.01μF $\pm^{100}_{0}$% 50WV ceramic |
| C412 | 1-101-006 | 0.04μF $\pm^{100}_{0}$% 50WV ceramic |
| C413 | 1-101-115 | 30pF ±5% 50WV ceramic |
| C414 | 1-101-571 | 140pF ±5% 50WV ceramic |
| C415 | 1-101-423 | 500pF ±20% 50WV ceramic |
| C416 | 1-101-423 | 500pF ±20% 50WV ceramic |
| C417 | 1-121-398 | 10μF $\pm^{100}_{0}$% 25WV electrolytic |
| C418 | 1-101-118 | 0.01μF ±20% 50WV ceramic |
| C419 | 1-101-118 | 0.01μF ±20% 50WV ceramic |
| C420 | 1-101-002 | 0.002μF $\pm^{100}_{0}$% 50WV ceramic |
| C422 | 1-101-006 | 0.04μF $\pm^{100}_{0}$% 50WV ceramic |
| C423 | 1-101-003 | 0.005μF $\pm^{100}_{0}$% 50WV ceramic |
| C424 | 1-121-358 | 220μF $\pm^{100}_{0}$% 16WV electrolytic |
| C501 | 1-121-469 | 10μF $\pm^{100}_{0}$% 10WV electrolytic |
| C502 | 1-102-834 | 390pF ±10% 50WV ceramic |
| C503 | 1-113-124 | 0.2μF ±10% 150WV paper |
| C504 | 1-121-246 | 4.7μF $\pm^{100}_{0}$% 160WV electrolytic |
| C505 | 1-113-122 | 0.05μF ±20% 500WV paper |
| C506 | 1-121-415 | 100μF $\pm^{100}_{0}$% 16WV electrolytic |
| C507 | 1-121-398 | 10μF $\pm^{100}_{0}$% 25WV electrolytic |
| C551 | 1-121-398 | 10μF $\pm^{100}_{0}$% 25WV electrolytic |
| C552 | 1-121-421 | 220μF $\pm^{100}_{0}$% 16WV electrolytic |
| C553 | 1-121-402 | 33μF $\pm^{100}_{0}$% 10WV electrolytic |
| C554 | 1-121-421 | 220μF $\pm^{100}_{0}$% 16WV electrolytic |
| C555 | 1-121-409 | 47μF $\pm^{100}_{0}$% 16WV electrolytic |
| C556 | 1-105-717-12 | 0.022μF ±10% 100WV mylar |
| C557 | 1-105-717-12 | 0.022μF ±10% 100WV mylar |
| C558 | 1-127-019 | 0.1μF ±20% 10WV electrolytic (alox) |
| C602 | 1-127-094 | 1μF ±20% 25WV electrolytic (alox) |
| C603 | 1-105-715-12 | 0.015μF ±10% 100WV mylar |
| C604 | 1-105-711-12 | 0.0068μF ±10% 100WV mylar |
| C605 | 1-105-721-12 | 0.047μF ±10% 100WV mylar |
| C606 | 1-121-415 | 100μF $\pm^{100}_{0}$% 16WV electrolytic |
| C607 | 1-121-396 | 4.7μF $\pm^{100}_{0}$% 50WV electrolytic |
| C608 | 1-127-091 | 0.22μF ±20% 25WV electrolytic (alox) |
| C609 | 1-105-721-12 | 0.047μF ±10% 100WV mylar |
| C610 | 1-105-717-12 | 0.022μF ±10% 100WV mylar |
| C611 | 1-121-393 | 3.3μF $\pm^{100}_{0}$% 50WV electrolytic |
| C701 | 1-127-232 | 4.7μF ±20% 25WV electrolytic (alox) |
| C702 | 1-131-116 | 10μF ±20% 16WV electrolytic |
| C703 | 1-121-398 | 10μF $\pm^{100}_{0}$% 50WV electrolytic |
| C704 | 1-127-231 | 3.3μF ±20% 25WV electrolytic (alox) |
| C705 | 1-121-420 | 220μF $\pm^{100}_{0}$% 10WV electrolytic |
| C706 | 1-121-426 | 470μF $\pm^{100}_{0}$% 16WV electrolytic |
| C707 | 1-105-727-12 | 0.15μF ±10% 100WV mylar |
| C709 | 1-105-713-12 | 0.01μF ±10% 100WV mylar |
| C801 | 1-105-715-12 | 0.015μF ±10% 100WV mylar |
| C802 | 1-105-723-12 | 0.068μF ±10% 100WV mylar |
| C803 | 1-105-729-12 | 0.22μF ±10% 100WV mylar |
| ※C804 | 1-105-721-12 | 0.047μF ±10% 100WV mylar |
| | 1-105-725-12 | 0.1μF ±10% 100WV mylar |
| | 1-105-727-12 | 0.15μF ±10% 100WV mylar |
| | 1-105-729-12 | 0.22μF ±10% 100WV mylar |
| C805 | 1-105-725-12 | 0.1μF ±10% 100WV mylar |

※ : to be selected

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| C806 | 1-121-421 | 220μF | $\pm^{100}_{0}$% | 16WV | electrolytic |
| C807 | 1-105-292-12 | 0.055μF | ±10% | 250WV | mylar |
| C808 | 1-105-274-12 | 0.01μF +0.005μF | | 200WV | mylar |
| C809 | 1-105-753-12 | 0.01μF | ±10% | 100WV | mylar |
| C811 | 1-113-122 | 0.05μF | ±20% | 500WV | paper |
| C812 | 1-113-122 | 0.05μF | ±20% | 500WV | paper |
| C813 | 1-113-122 | 0.05μF | ±20% | 500WV | paper |
| C814 | 1-113-122 | 0.05μF | ±20% | 500WV | paper |
| C818 | 1-101-845 | 1,000pF | $\pm^{100}_{0}$% | 500WV | ceramic |
| C819 | 1-101-455 | 1,000pF | ±20% | 50WV | ceramic |
| C901 | 1-121-555 | 4,000μF | $\pm^{100}_{15}$% | 15WV | electrolytic |
| C902 | 1-119-106 | 100μF | ±20% | 16WV | electrolytic |
| C903 | 1-121-555 | 4,000μF | $\pm^{100}_{15}$% | 15WV | electrolytic |
| C904 | 1-101-003 | 0.005μF | $\pm^{100}_{0}$% | 50WV | ceramic |
| C905 | 1-101-003 | 0.005μF | $\pm^{100}_{0}$% | 50WV | ceramic |

**RESISTORS**

| | | | | | |
|---|---|---|---|---|---|
| R301 | 1-248-629 | 15Ω | ±10% | ERD14V | carbon |
| R303 | 1-248-627 | 12Ω | ±5% | ERD14V | carbon |
| R304 | 1-248-649 | 100Ω | ±10% | ERD14V | carbon |
| R305 | 1-248-659 | 270Ω | ±10% | ERD14V | carbon |
| R306 | 1-248-657 | 220Ω | ±10% | ERD14V | carbon |
| R307 | 1-248-665 | 470Ω | ±10% | ERD14V | carbon |
| R308 | 1-248-656 | 200Ω | ±10% | ERD14V | carbon |
| R309 | 1-248-657 | 220Ω | ±10% | ERD14V | carbon |
| R310 | 1-248-659 | 270Ω | ±10% | ERD14V | carbon |
| R311 | 1-248-658 | 240Ω | ±10% | ERD14V | carbon |
| R312 | 1-248-653 | 150Ω | ±10% | ERD14V | carbon |
| R313 | 1-248-696 | 9,100Ω | ±10% | ERD14V | carbon |
| R314 | 1-248-675 | 1,200Ω | ±10% | ERD14V | carbon |
| R315 | 1-248-651 | 120Ω | ±10% | ERD14V | carbon |
| R316 | 1-246-653 | 150Ω | ±10% | ERD14T | carbon |
| R317 | 1-248-646 | 75Ω | ±10% | ERD14V | carbon |
| R318 | 1-248-680 | 2kΩ | ±10% | ERD14V | carbon |
| R319 | 1-248-655 | 180Ω | ±10% | ERD14V | carbon |
| R320 | 1-248-690 | 5,100Ω | ±10% | ERD14V | carbon |
| R321 | 1-248-681 | 2,200Ω | ±10% | ERD14V | carbon |
| R322 | 1-248-671 | 820Ω | ±10% | ERD14V | carbon |
| R323 | 1-248-687 | 3,900Ω | ±10% | ERD14V | carbon |
| R324 | 1-248-665 | 470Ω | ±5% | ERD14V | carbon |
| R325 | 1-246-677 | 1,500Ω | ±10% | ERD14T | carbon |
| ※ R326 | 1-248-706 | 24kΩ | ±5% | ERD14V | carbon |
| | 1-248-707 | 27kΩ | ±5% | ERD14V | carbon |
| | 1-248-708 | 30kΩ | ±5% | ERD14V | carbon |
| | 1-248-710 | 36kΩ | ±5% | ERD14V | carbon |
| | 1-248-711 | 39kΩ | ±5% | ERD14V | carbon |
| | 1-248-712 | 43kΩ | ±5% | ERD14V | carbon |
| | 1-248-713 | 47kΩ | ±5% | ERD14V | carbon |
| | 1-248-714 | 51kΩ | ±5% | ERD14V | carbon |
| | 1-248-715 | 56kΩ | ±5% | ERD14V | carbon |
| R327 | 1-248-700 | 13kΩ | ±5% | ERD14V | carbon |

| Ref. No. | Part No. | Description | | | |
|---|---|---|---|---|---|
| R328 | 1-248-655 | 180Ω | ±10% | ERD14V | carbon |
| R329 | 1-248-665 | 470Ω | ±10% | ERD14V | carbon |
| R330 | 1-248-683 | 2,700Ω | ±5% | ERD14V | carbon |
| R331 | 1-248-671 | 820Ω | ±10% | ERD14V | carbon |
| R332 | 1-248-657 | 220Ω | ±5% | ERD14V | carbon |
| ※ R333 | 1-248-703 | 18kΩ | ±5% | ERD14V | carbon |
| | 1-248-704 | 20kΩ | ±5% | ERD14V | carbon |
| | 1-248-705 | 22kΩ | ±5% | ERD14V | carbon |
| | 1-248-706 | 24kΩ | ±5% | ERD14V | carbon |
| R334 | 1-248-666 | 510Ω | ±10% | ERD14V | carbon |
| R335 | 1-248-666 | 510Ω | ±10% | ERD14V | carbon |
| R401 | 1-248-657 | 220Ω | ±5% | ERD14V | carbon |
| R402 | 1-248-664 | 430Ω | ±5% | ERD14V | carbon |
| R403 | 1-248-706 | 24kΩ | ±10% | ERD14V | carbon |
| R404 | 1-248-686 | 3,600Ω | ±10% | ERD14V | carbon |
| R405 | 1-248-673 | 1kΩ | ±10% | ERD14V | carbon |
| R406 | 1-248-649 | 100Ω | ±10% | ERD14V | carbon |
| ※ R407 | 1-203-892 | 3,600Ω | ±5% | RD1/16L | carbon |
| | 1-203-497 | 3,900Ω | ±5% | RD1/16L | carbon |
| | 1-203-185 | 4,700Ω | ±5% | RD1/16L | carbon |
| | 1-203-186 | 5,600Ω | ±5% | RD1/16L | carbon |
| | 1-204-345 | 5,100Ω | ±5% | RD1/16L | carbon |
| | 1-203-187 | 6,800Ω | ±5% | RD1/16L | carbon |
| | 1-203-189 | 8,200Ω | ±5% | RD1/16L | carbon |
| | 1-203-190 | 10kΩ | ±5% | RD1/16L | carbon |
| R408 | 1-248-694 | 7,500Ω | ±10% | ERD14V | carbon |
| R409 | 1-248-685 | 3,300Ω | ±10% | ERD14V | carbon |
| R410 | 1-248-670 | 750Ω | ±10% | ERD14V | carbon |
| R411 | 1-248-673 | 1kΩ | ±10% | ERD14V | carbon |
| R412 | 1-204-345 | 5,100Ω | ±5% | RD1/16L | carbon |
| R413 | 1-248-649 | 100Ω | ±10% | ERD14V | carbon |
| R414 | 1-248-675 | 1,200Ω | ±5% | ERD14V | carbon |
| R415 | 1-248-675 | 1,200Ω | ±5% | ERD14V | carbon |
| R416 | 1-248-685 | 3,300Ω | ±5% | ERD14V | carbon |
| R417 | 1-248-685 | 3,300Ω | ±5% | ERD14V | carbon |
| R418 | 1-248-641 | 47Ω | ±10% | ERD14V | carbon |
| R419 | 1-248-715 | 56kΩ | ±10% | ERD14V | carbon |
| R420 | 1-248-673 | 1kΩ | ±10% | ERD14V | carbon |
| R501 | 1-246-697 | 10kΩ | ±5% | ERD14T | carbon |
| ※ R502 | 1-246-712 | 43kΩ | ±5% | ERD14T | carbon |
| | 1-246-713 | 47kΩ | ±5% | ERD14T | carbon |
| | 1-246-714 | 51kΩ | ±5% | ERD14T | carbon |
| | 1-246-715 | 56kΩ | ±5% | ERD14T | carbon |
| | 1-246-716 | 62kΩ | ±5% | ERD14T | carbon |
| | 1-246-717 | 68kΩ | ±5% | ERD14T | carbon |
| R503 | 1-246-651 | 120Ω | ±5% | ERD14T | carbon |
| R504 | 1-246-690 | 5,100Ω | ±5% | ERD14T | carbon |
| R506 | 1-246-725 | 150kΩ | ±5% | ERD14T | carbon |
| R507 | 1-246-679 | 1,800Ω | ±5% | ERD14T | carbon |
| R509 | 1-246-714 | 51kΩ | ±5% | ERD14T | carbon |
| R551 | 1-246-697 | 10kΩ | ±5% | ERD14T | carbon |

※ : to be selected

| Ref. No. | Part No. | | Description | | |
|---|---|---|---|---|---|
| R552 | 1-246-697 | 10kΩ | ±5% | ERD14T | carbon |
| R553 | 1-246-679 | 1,800Ω | ±5% | ERD14T | carbon |
| R554 | 1-246-612 | 3Ω | ±5% | ERD14T | carbon |
| R555 | 1-246-673 | 6,800Ω | ±5% | ERD14T | carbon |
| R556 | 1-246-675 | 1,200Ω | ±5% | ERD14T | carbon |
| R557 | 1-246-641 | 47Ω | ±5% | ERD14T | carbon |
| R558 | 1-246-655 | 180Ω | ±5% | ERD14T | carbon |
| R559 | 1-246-659 | 270Ω | ±5% | ERD14T | carbon |
| R560 | 1-246-675 | 1,200Ω | ±5% | ERD14T | carbon |
| R561 | 1-246-612 | 3Ω | ±5% | ERD14T | carbon |
| R562 | 1-246-618 | 5.1Ω | ±5% | ERD14T | carbon |
| R563 | 1-246-631 | 18Ω | ±5% | ERD14T | carbon |
| R564 | 1-246-655 | 180Ω | ±5% | ERD14T | carbon |
| R601 | 1-246-642 | 51Ω | ±5% | ERD14T | carbon |
| R602 | 1-246-656 | 200Ω | ±5% | ERD14T | carbon |
| R603 | 1-246-697 | 10kΩ | ±5% | ERD14T | carbon |
| R604 | 1-246-718 | 100kΩ | ±5% | ERD14T | carbon |
| R605 | 1-246-669 | 680Ω | ±5% | ERD14T | carbon |
| R606 | 1-246-647 | 82Ω | ±5% | ERD14T | carbon |
| R607 | 1-246-688 | 4,300Ω | ±5% | ERD14T | carbon |
| R608 | 1-246-685 | 3,300Ω | ±5% | ERD14T | carbon |
| R609 | 1-250-873 | 1kΩ | ±5% | RD12T | carbon |
| R610 | 1-246-677 | 1,500Ω | ±5% | ERD14T | carbon |
| R611 | 1-246-694 | 7,500Ω | ±5% | ERD14T | carbon |
| R613 | 1-246-667 | 560Ω | ±5% | ERD14T | carbon |
| R614 | 1-246-662 | 360Ω | ±5% | ERD14T | carbon |
| R615 | 1-246-664 | 430Ω | ±5% | ERD14T | carbon |
| R616 | 1-246-684 | 3kΩ | ±5% | ERD14T | carbon |
| R617 | 1-246-680 | 2kΩ | ±5% | ERD14T | carbon |
| R701 | 1-246-663 | 390Ω | ±5% | ERD14T | carbon |
| R702 | 1-246-688 | 4,300Ω | ±5% | ERD14T | carbon |
| R703 | 1-246-677 | 1,500Ω | ±5% | ERD14T | carbon |
| R704 | 1-246-629 | 15Ω | ±5% | ERD14T | carbon |
| R705 | 1-246-688 | 4,300Ω | ±5% | ERD14T | carbon |
| R706 | 1-246-688 | 4,300Ω | ±5% | ERD14T | carbon |
| R707 | 1-246-696 | 9,100Ω | ±5% | ERD14T | carbon |
| R708 | 1-246-680 | 2kΩ | ±5% | ERD14T | carbon |
| R709 | 1-246-680 | 2kΩ | ±5% | ERD14T | carbon |
| R710 | 1-246-695 | 8,200Ω | ±5% | ERD14T | carbon |
| ※R711 | 1-246-678 | 1,600Ω | ±5% | ERD14T | carbon |
| | 1-246-679 | 1,800Ω | ±5% | ERD14T | carbon |
| | 1-246-680 | 2kΩ | ±5% | ERD14T | carbon |
| | 1-246-681 | 2,200Ω | ±5% | ERD14T | carbon |
| R712 | 1-246-660 | 300Ω | ±5% | ERD14T | carbon |
| R713 | 1-207-018 | 3Ω | ±5% | RW¼RL | wire wound |
| R714 | 1-207-018 | 3Ω | ±5% | RW¼RL | wire wound |
| R715 | 1-246-656 | 200Ω | ±5% | ERD14T | carbon |
| R716 | 1-246-702 | 15kΩ | ±5% | ERD14T | carbon |
| R801 | 1-246-673 | 1kΩ | ±5% | ERD14T | carbon |
| R803 | 1-246-649 | 100Ω | ±5% | ERD14T | carbon |
| R804 | 1-246-662 | 360Ω | ±5% | ERD14T | carbon |
| R806 | 1-246-697 | 10kΩ | ±5% | ERD14T | carbon |
| R807 | 1-246-691 | 5,600Ω | ±5% | ERD14T | carbon |
| R808 | 1-246-694 | 7,500Ω | ±5% | ERD14T | carbon |
| R811 | 1-202-621 | 100kΩ | ±10% | RC½ | composition |
| R812 | 1-202-621 | 100kΩ | ±10% | RC½ | composition |
| R813 | 1-202-649 | 1.5MΩ | ±10% | RC½ | composition |
| R814 | 1-246-732 | 300kΩ | ±5% | ERD14T | carbon |
| R901 | 1-201-676 | 750kΩ | ±10% | RC½L | composition |
| R902 | 1-206-056 | 120Ω | ±10% | 2W | metal oxide |
| VR301 | 1-221-998 | 500Ω-B | adjustable | (AGC) | |
| VR501 | 1-222-335 | 250kΩ-B | variable | (Brightness) | |
| VR502 | 1-222-337 | 3kΩ-C | variable | (Contrast) | |
| VR551 | 1-222-340 | 5kΩ-D | variable (with SW) | (Volume) | |
| VR601 | 1-222-184 | 1kΩ-B | variable | (Hor. Hold) | |
| VR701 | 1-222-336 | 2kΩ-B | variable | (Ver. Hold) | |
| VR702 | 1-221-349 | 5kΩ-B | adjustable | (Ver. Linearity) | |
| VR703 | 1-221-349 | 5kΩ-B | adjustable | (Ver. Height) | |
| VR801 | 1-221-351 | 600kΩ-B | adjustable | (Focus) | |

### MISCELLANEOUS

| | | |
|---|---|---|
| DET | 1-425-518 | detector block |
| DY | 1-451-003-09 | deflection yoke ass'y |
| F901 | 1-532-118-12 | fuse 1.6A |
| | 1-501-118-11 | telescopic antenna |
| | 1-502-100 | speaker |
| | 1-506-108 | SV-pin |
| | 1-507-166 | jack, external antenna |
| | 1-507-174-33 | jack, earphone; twin |
| | 1-507-901-12 | jack nut |
| | 1-508-156-41 | power plug with switch |
| | 1-526-084-21 | socket, picture tube |
| | 1-536-107 | lug terminal board, 1–1P |
| | 1-417-019-32 | U-V separator ass'y |
| | 1-534-379-41 | output cable, IF |
| | 7-613-077-02 | coaxial cable 1.5D-XV |
| | 8-731-105-10 | picture tube (140CB4) |

## TUNER BLOCK

### SEMICONDUCTORS

| | | |
|---|---|---|
| Q201 | transistor | SPS-1351 |
| Q202 | transistor | SPS-1353 |
| Q203 | transistor | SPS-1352 |

### COILS AND TRANSFORMERS

| | | |
|---|---|---|
| L201 | 1-409-192 | IF trap coil |
| L202 | 1-409-186 | IF trap coil |

※ : to be selected

| Ref. No. | Part No. | Description |
|---|---|---|
| L203 | 1-425-595 | RF coil |
| L204 | 1-425-596 | RF coil |
| L205 | 1-425-597 | RF coil |
| L207 | 1-403-544 | IFT transformer |
| L208 | 1-425-339 | coil, compensating 43W |
| L211 | 1-407-096 | 7μF, micro inductor |
| L213 | 1-421-210 | choke coil |
| L214 | 1-421-210 | choke coil |
| L215 | 1-423-147 | coil with core |
| L216 | 1-423-149 | coil with core |

**CAPACITORS**

| | | | | | |
|---|---|---|---|---|---|
| C201 | 1-101-564 | 100pF | ±5% | 50WV | ceramic |
| C202 | 1-101-561 | 30pF | ±5% | 50WV | ceramic |
| C204 | 1-101-559 | 15pF | ±5% | 50WV | ceramic |
| C205 | 1-101-561 | 30pF | ±5% | 50WV | ceramic |
| C206 | 1-101-561 | 30pF | ±5% | 50WV | ceramic |
| C207 | 1-101-587 | 1.3pF | ±0.2pF | 50WV | ceramic |
| C208 | 1-102-813 | 13pF | ±5% | 50WV | ceramic |
| C210 | 1-101-072 | 0.01μF | $\pm^{80}_{20}$% | 50WV | ceramic |
| C212 | 1-101-559 | 15pF | ±5% | 50WV | ceramic |
| C213 | 1-101-865 | 22pF | ±5% | 50WV | ceramic |
| C215 | 1-101-560 | 20pF | ±5% | 50WV | ceramic |
| C216 | 1-101-564 | 100pF | ±5% | 50WV | ceramic |
| C217 | 1-101-072 | 0.01μF | $\pm^{80}_{20}$% | 50WV | ceramic |
| C218 | 1-101-576 | 1.5pF | ±0.2pF | 50WV | ceramic |
| C219 | 1-101-560 | 20pF | ±5% | 50WV | ceramic |
| C220 | 1-102-988 | 4pF | ±0.2pF | 50WV | ceramic |
| C221 | 1-102-988 | 4pF | ±0.2pF | 50WV | ceramic |
| C222 | 1-102-143 | 2pF | ±0.2pF | 50WV | ceramic |
| C223 | 1-101-560 | 20pF | ±5% | 50WV | ceramic |
| C225 | 1-102-455 | 0.001μF | ±20% | 50WV | ceramic |
| C226 | 1-102-144 | 25pF | ±5% | 50WV | ceramic |
| C227 | 1-101-584 | 2pF | ±0.2pF | 50WV | ceramic |
| C228 | 1-101-072 | 0.01μF | $\pm^{80}_{20}$% | 50WV | ceramic |
| C230 | 1-102-078 | 0.0018μF | $\pm^{200}_{0}$% | 50WV | feed through |
| C231 | 1-102-078 | 0.0018μF | $\pm^{200}_{0}$% | 50WV | feed through |
| C235 | 1-105-839-12 | 0.033μF | ±20% | 50WV | mylar |

**RESISTORS**

| | | | | | |
|---|---|---|---|---|---|
| R203 | 1-244-462 | 360Ω | ±5% | RD1/8P | carbon |
| R204 | 1-244-452 | 130Ω | ±5% | RD1/8P | carbon |
| R205 | 1-244-493 | 6,800Ω | ±5% | RD1/8P | carbon |
| R206 | 1-244-485 | 3,300Ω | ±5% | RD1/8P | carbon |
| R207 | 1-244-473 | 1kΩ | ±5% | RD1/8P | carbon |
| R208 | 1-244-487 | 3,900Ω | ±5% | RD1/8P | carbon |
| R209 | 1-244-480 | 2kΩ | ±5% | RD1/8P | carbon |
| R210 | 1-244-494 | 7,500Ω | ±5% | RD1/8P | carbon |
| R211 | 1-244-485 | 3,300Ω | ±5% | RD1/8P | carbon |
| R212 | 1-244-497 | 10kΩ | ±5% | RD1/8P | carbon |
| R213 | 1-244-497 | 10kΩ | ±5% | RD1/8P | carbon |

*When ordering replacement parts, you should use PART NUMBER listed on the Parts List or shown in the EXPLODED VIEW. The reference number should not be used for ordering purposes.*

**Hardware Nomenclature**

**P** – Pan Head Screw

**PS** – Pan Head Screw with Spring Washer

**K** – Flat Countersunk Head Screw

**B** – Binding Head Screw

**RK** – Oval Countersunk Head Screw

**T** – Truss Head Screw

**R** – Round Head Screw

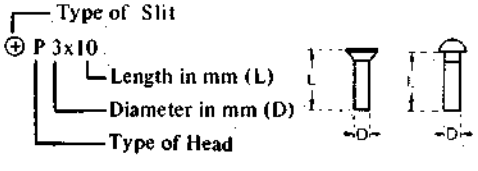
**F** – Flat Fillister Head Screw

**SC** – Set Screw

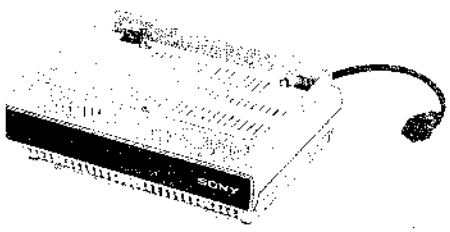
**E** – Retaining Ring (E Washer)

W – Washer
SW – Spring Washer
LW – Lock Washer
N – Nut

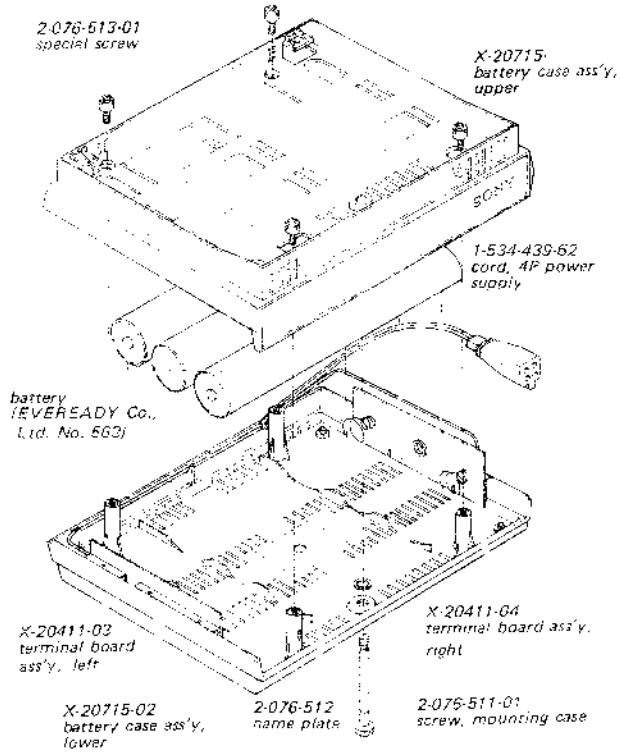
**– Example –**



# TV-510U BATTERY PACK



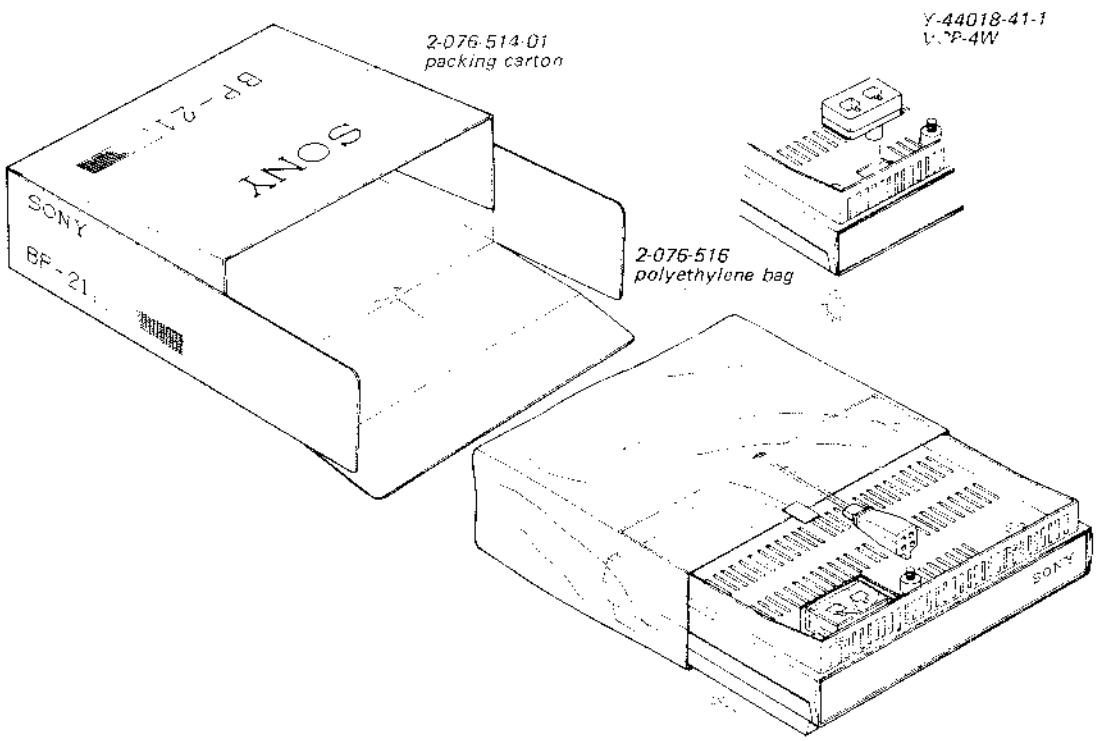
## EXPLODED VIEW




## SPECIFICATIONS

| | |
|---|---|
| **Final Discharge Time:** | 2 hours |
| **Full Charge Time:** | 12 hours |
| **Batteries:** | EVEREADY No. 563 |
| **Dimensions:** | 8" (W) x 6⅜" (D) x 2⅝" (H)<br>(204 mm x 161 mm x 71 mm) |
| **Weight:** | 15 oz (400 g) |

## PACKING




SONY CORPORATION

SONY CORPORATION

# COMPLETE SPARE PARTS LIST CHANGE NOTICE

**MODEL** TV-510U (USA & CANADA Model)

(Production change, ~~correction, addition, deletion~~)
is done onto this parts list.
Replace the former copy with this new one. Refer to this parts list when you order the service parts.

SONY®

# Complete Spare Parts List

## Model TV-510U

U. S. A. MODEL
CANADA MODEL

"IMPORTANT"

When ordering parts, please do not fail to furnish us the following:

1. Part Number
2. Model Name
3. Description as mentioned in this parts list

We are now using EDPS (Electronic Data Processing System) in all the departments concerned, for procurement, inventory control, packing, warehousing, etc. Your orders are processed mainly from the PART NUMBERS referred by you. Incorrect part numbers, therefore, will result in incorrect parts shipment. To assure prompt shipment of correct parts, your cooperation will be appreciated.

NOTE:

Prices are subject to change without notice.

SONY CORPORATION

# COMPLETE SPARE PARTS LIST FOR TV-510U

(Canada and USA Model)

OCTOBER, 1971

| Part No. | Description | Unit Price |
|---|---|---|
| | **1. MECHANICAL PARTS** | |
| X-40147-01-1 | Cabinet Ass'y, front | $0.73 |
| X-40147-02 | Protector Ass'y | 0.90 |
| X-40147-03 | Carrying Handle Ass'y | 0.20 |
| X-40147-04 | Knob Ass'y, channel selector | 0.17 |
| X-40147-05 | Knob Ass'y, fine tuning | 0.15 |
| X-40147-06 | UHF Dial Ass'y | 0.09 |
| X-40147-07 | Knob Ass'y, control (A) | 0.12 |
| X-40147-08 | Knob Ass'y, control (B) | 0.04 |
| X-40147-09 | Bushing Ass'y, insulating | 0.04 |
| X-43020-07 | Knob Ass'y, uhf dial | 0.12 |
| 2-825-001 | Spacer, transistor | 0.01 |
| 4-003-346 | Clamp, antenna | 0.04 |
| 4-004-127 | Cushion, picture tube | 0.08 |
| 4-005-422 | Grounding Spring | 0.02 |
| 4-005-615 | Cover, terminal | 0.01 |
| 4-006-238-03 | Screw, tuner mounting | 0.01 |
| 4-006-255 | Terminal Pin | 0.01 |
| 4-008-361 | Heat Sink, TO-1 | 0.02 |
| 4-009-536 | SIF Shield Case, upper | 0.02 |
| ◆ 4-015-728 | SIF Shield Case, upper | 0.03 |
| 4-009-537 | SIF Shield Case, lower | 0.02 |
| ◆ 4-015-729 | SIF Shield Case, lower | 0.02 |
| 4-009-538 | Fiber Shield Case | 0.02 |
| 4-010-012 | Cylindrical Shield, micro inductor | 0.03 |
| 4-012-812 | VIF Shield Case, upper | 0.03 |
| ◆ 4-015-730 | VIF Shield Case, upper | 0.02 |
| 4-010-506 | VIF Shield Case, lower | 0.01 |

Note: The components indicated with the symbol ◆ are used for the following sets;

USA Model; Serial No. 48001 and later
CANADA Model; Serial No. 10201 and later

| Part No. | Description | Unit Price |
|---|---|---|
| ◆ 4-015-731 | VIF Shield Case, lower | $0.01 |
| 4-011-434-31 | Knob, control C | 0.01 |
| 4-014-731-01 | Nameplate | 0.02 |
| 4-014-732 | Connecting Plate, battery case | 0.03 |
| 4-014-734 | Bracket, picture tube mounting | 0.12 |
| 4-014-735 | Cabinet, rear | 0.54 |
| 4-014-736 | Shielder, heat | 0.03 |
| 4-014-737 | Chassis | 0.38 |
| 4-014-738 | Bracket, tuner mounting | 0.07 |
| 4-014-739 | Bracket, power plug mounting | 0.07 |
| 4-014-740 | Heat Sink, deflection circuit board | 0.03 |
| 4-014-741 | Shield Case, audio circuit board | 0.02 |
| 4-014-742 | Clamp, electrolytic capacitor mounting | 0.06 |
| 4-014-743 | Bracket A, volume control mounting | 0.01 |
| 4-014-744 | Bracket B, volume control mounting | 0.04 |
| 4-014-745 | Bracket C, volume control mounting | 0.03 |
| 4-010-017-02 | Caution Label, high voltage | 0.01 |
| 4-014-753 | Ornamental Plate | 0.14 |
| 4-014-754 | Shield Plate | 0.01 |

## II. MOUNTING HARDWARES

| | | (per 100) |
|---|---|---|
| 7-682-125-01 | Screw, machine phill P 2 x 5 | 0.10/100 |
| 7-682-146-01 | Screw, machine phill P 3 x 5 | 0.12/100 |
| 7-682-198-01 | Screw, machine phill P 3 x 50 | 0.62/100 |
| 7-682-149-13 | Screw, machine phill P 3 x 10 | 0.32/100 |
| 7-682-248-04 | Screw, machine phill K 3 x 8 | 0.48/100 |
| 7-621-559-69 | Screw, machine phill K 2.6 x 12 | 0.69/100 |
| 7-621-722-57 | Screw, tapping phill BV 3 x 8 | 0.23/100 |
| 7-621-722-63 | Screw, tapping phill BV 3 x 10 | 0.24/100 |
| 7-621-724-32 | Screw, tapping phill R 4 x 8 | 0.38/100 |
| 7-621-724-44 | Screw, tapping phill R 4 x 10 | 0.40/100 |
| 7-684-013-01 | Nut 3 ϕ | 0.28/100 |
| 7-622-107-05 | Nut 2.6 ϕ | 0.27/100 |
| 7-623-108-17 | Washer 3 ϕ | 0.10/100 |
| 7-623-110-15 | Washer 4 ϕ | 0.22/100 |
| 7-623-207-22 | Washer, spring 2.6 ϕ | 0.05/100 |
| 7-623-208-22 | Washer, spring 3 ϕ | 0.06/100 |
| 7-623-408-06 | Washer, external teeth 3 ϕ | 0.19/100 |
| 7-623-510-21 | Tug Washer 4 ϕ | 0.66/100 |

| Ref. No. | Part No. | Description | Unit Price |
|---|---|---|---|

## III. ELECTRICAL PARTS

Note: The components indicated with the symbol ◆ are used for the following sets;

USA Model: Serial No.48001 and later
CANADA Model: Serial No.10201 and later

### General

| | | | |
|---|---|---|---|
| | 1-463-008 | UHF Tuner Ass'y (BT-181) | $4.20 |
| | 8-980-132-15 | VHF Tuner Ass'y (BT-443Wu) | 5.19 |
| | 8-980-140-25 | Signal Circuit Board (BC), complete | 8.17 |
| ◆ | 8-980-191-25 | Signal Circuit Board (BC), complete | 7.41 |
| | 8-980-168-35 | Deflection Circuit Board (EF), complete | 10.51 |
| | 8-980-168-45 | Sound Circuit Board (S), complete | 2.31 |
| | 8-980-168-55 | Power Supply Circuit Board (P), complete | 0.94 |

### Semiconductors

| | | | |
|---|---|---|---|
| Q301 | | Transistor, 2SC657 | 0.30 |
| Q302 | | Transistor, 2SC657 | 0.30 |
| Q303 | | Transistor, 2SC629 | 0.25 |
| Q304 | | Transistor, 2SB382 | 0.21 |
| ◆ Q304 | | Transistor, 2SA678 | 0.17 |
| Q305 | | Transistor, 2SB382 | 0.21 |
| ◆ Q305 | | Transistor, 2SA677 | 0.15 |
| Q401 | | Transistor, 2SC403A | 0.14 |
| Q402 | | Transistor, 2SC403A | 0.14 |
| ◆ Q402 | | - | |
| Q403 | | Transistor, 2SC403A | 0.14 |
| ◆ Q403 | | - | |
| Q501 | | Transistor, 2SC352A | 0.38 |
| Q551 | | Transistor, 2SC633A | 0.14 |
| Q552 | | Transistor, 2SB383 | 0.68 |
| Q553 | | Transistor, 2SD72 | 0.39 |
| Q554 | | Transistor, 2SB382 | 0.21 |
| Q601 | | Transistor, 2SA610 | 0.21 |

| Ref. No. | Part No. | Description | | Unit Price |
|---|---|---|---|---|
| Q701 | | Transistor, | 2SC633A | $0.14 |
| Q702 | | Transistor, | 2SB382 | 0.21 |
| Q703 | | Transistor, | 2SD29 | 0.42 |
| Q801 | | Transistor, | 2SB324 | 0.28 |
| Q802 | | Transistor, | 2SC756 | 0.42 |
| D301 | | Diode, | 1T261 | 0.05 |
| D302 | | Diode, | 1T22 | 0.05 |
| ◆ D302 | | Diode, | 1T22A | 0.05 |
| D401 | | Diode, | 1T243 | 0.07 |
| ◆ D401 | | Diode, | 1T374 | 0.11 |
| D402 | | Diode, | 1T23 | 0.05 |
| ◆ D402 | | - | | |
| D403 | | Diode, | 1T23 | 0.05 |
| ◆ D403 | | - | | |
| D501 | | Diode, | 1T22A | 0.05 |
| D601 | | Diode, | 1T22A | 0.05 |
| D602 | | Diode, | 1T22A | 0.05 |
| D701 | | Diode, | 1T22A | 0.05 |
| D702 | | Diode, | 1T22A | 0.05 |
| D801 | | Diode, | HFSD1Z | 0.12 |
| D802 | | Diode, | 10D2 | 0.11 |
| D803 | | Diode, | UFSD1A | 0.21 |
| D901 | | Diode, | 10D2 | 0.11 |
| D902 | | Diode, | 10D2 | 0.11 |
| D903 | | Diode, | 10D2 | 0.11 |
| Th301 | 8-690-003 | Thermistor, | S90 | 0.03 |
| Th302 | 8-690-006 | Thermistor, | S1250 | 0.03 |
| Th551 | 8-691-001 | Thermistor, | CS-120 | 0.06 |
| IC401 | 8-759-101-60 | IC, | μPC-16C | 1.29 |

| Ref. No. | Part No. | Description | | Unit Price |
|---|---|---|---|---|
| | | **Coils** | | |
| L7 | 1-407-178 | 1 µH | micro inductor ---------- | $0.04 |
| L301 | 1-409-160-31 | 41.25 MHz | trap coil ---------- | 0.09 |
| L302 | 1-409-160-21 | 47.25 MHz | trap coil ---------- | 0.09 |
| L303 | 1-409-160-21 | 39.75 MHz | trap coil ---------- | 0.09 |
| L304 | 1-409-170 | 33.75 MHz | trap coil ---------- | 0.12 |
| L305 | 1-407-178 | 1 µH | micro inductor ---------- | 0.04 |
| ◆L305 | 1-407-520 | 0.6 µH | micro inductor ---------- | 0.08 |
| L306 | 1-407-178 | 1 µH | micro inductor ---------- | 0.04 |
| ◆L306 | 1-407-520 | 0.6 µH | micro inductor ---------- | 0.08 |
| L307 | 1-407-157 | 10 µH | micro inductor ---------- | 0.03 |
| ◆L307 | 1-407-178 | 1 µH | micro inductor ---------- | 0.04 |
| L308 | 1-407-184 | 3.3 µH | micro inductor ---------- | 0.05 |
| ◆L308 | 1-407-157 | 10 µH | micro inductor ---------- | 0.03 |
| L309 | 1-407-173 | 220 µH | micro inductor ---------- | 0.03 |
| ◆L309 | 1-407-184 | 3.3 µH | micro inductor ---------- | 0.05 |
| L310 | 1-407-184 | 3.3 µH | micro inductor ---------- | 0.05 |
| ◆L310 | | - | | |
| L311 | 1-407-178 | 1 µH | micro inductor ---------- | 0.04 |
| ◆L311 | 1-407-184 | 3.3 µH | micro inductor ---------- | 0.05 |
| L401 | 1-407-178 | 1 µH | micro inductor ---------- | 0.04 |
| L402 | 1-409-036 | 4.5 MHz | trap coil ---------- | 0.10 |
| ◆L402 | 1-409-179 | 4.5 MHz | trap coil ---------- | 0.11 |
| L403 | 1-407-187 | 5.6 µH | micro inductor ---------- | 0.04 |
| ◆L403 | | - | | |
| L501 | 1-407-172 | 180 µH | micro inductor ---------- | 0.03 |
| L601 | 1-407-165 | 47 µH | micro inductor ---------- | 0.03 |
| L701 | 1-421-127 | Choke Coil, vertical output ---------- | | 0.34 |
| L801 | 1-421-013-11 | 25 µH | filter inductor ---------- | 0.04 |
| L803 | 1-413-012-12 | Coil, horizontal stabilizing ---------- | | 0.14 |
| L901 | 1-421-150-12 | Filter Choke Coil, power rectifier ---------- | | 0.36 |

| Ref. No. | Part No. | Description | Unit Price |
|---|---|---|---|
| | | **Transformers** | |
| T302 | 1-403-701 | Transformer, video i-f; VIFT-2 | $0.12 |
| T303 | 1-403-702 | Transformer, video i-f; VIFT-3 | 0.12 |
| ◆ T303 | 1-403-727 | Transformer, video i-f; VIFT-3 | 0.12 |
| T401 | 1-403-348 | Transformer, sound i-f; SIFT-1 | 0.12 |
| ◆ T401 | 1-403-362 | Transformer, sound i-f; SIFT-1 | 0.12 |
| T402 | 1-403-349 | Transformer, sound i-f; SIFT-2 | 0.13 |
| ◆ T402 | 1-403-361 | Transformer, sound i-f; SIFT-2 | 0.12 |
| T403 | 1-403-313 | Transformer, sound i-f; SIFT-3 | 0.27 |
| ◆ T403 | 1-403-361 | Transformer, sound i-f; SIFT-3 | 0.12 |
| T701 | 1-435-008-12 | Transformer, vertical osc.; VBT | 0.14 |
| | 1-435-008-11 | Transformer, vertical osc.; VBT | 0.14 |
| T801 | 1-435-016-11 | Transformer, horizontal osc.; HBT | 0.16 |
| T802 | 1-437-004-11 | Transformer, horizontal drive; HDT | 0.21 |
| T803 | 1-453-625 | High Voltage Cage Block; HOT | 3.12 |
| T901 | 1-441-618 | Transformer, power; PT | 1.28 |
| | | **Capacitors** | |
| C301 | 1-101-957 | 7 pF ±0.5 pF 50 WV ceramic | 0.02 |
| ◆ C301 | 1-102-858 | 10 pF ±0.5 pF 50 WV ceramic | 0.02 |
| C302 | 1-101-969 | 5 pF ±0.5 % 50 WV ceramic | 0.03 |
| ◆ C302 | 1-102-882 | 4 pF ±0.25 pF 50 WV ceramic | 0.02 |
| C303 | 1-101-969 | 5 pF ±0.5 % 50 WV ceramic | 0.03 |
| C304 | 1-101-832 | 9 pF ±0.2 pF 50 WV ceramic | 0.01 |
| ◆ C304 | 1-102-856 | 5 pF ±0.5 pF 50 WV ceramic | 0.03 |
| C305 | 1-101-583 | 60 pF ±5 % 50 WV ceramic | 0.02 |
| ◆ C305 | 1-102-664 | 9 pF ±0.5 pF 50 WV ceramic | 0.02 |
| C306 | 1-101-057 | 80 pF ±5 % 50 WV ceramic | 0.02 |
| ◆ C306 | 1-102-856 | 5 pF ±0.5 pF 50 WV ceramic | 0.03 |
| C307 | 1-101-892 | 82 pF ±5 % 50 WV ceramic | 0.02 |
| ◆ C307 | | - | |
| C308 | 1-101-003 | 0.0047 µF +100 -0 % 50 WV ceramic | 0.02 |
| ◆ C308 | 1-102-863 | 82 pF ±5 % 50 WV ceramic | 0.03 |
| C309 | 1-101-003 | 0.0047 µF +100 -0 % 50 WV ceramic | 0.02 |
| C310 | 1-101-961 | 12 pF ±5 % 50 WV ceramic | 0.02 |
| ◆ C310 | 1-101-003 | 0.0047 µF +100 -0 % 50 WV ceramic | 0.02 |

| Ref. No. | Part No. | Description | | | Unit Price |
|---|---|---|---|---|---|
| C311 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | $0.02 |
| C312 | 1-101-455 | 0.001 µF ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆C312 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C313 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| ◆C313 | 1-102-959 | 22 pF ±5 % | 50 WV | ceramic ------ | 0.01 |
| C314 | 1-101-961 | 12 pF ±5 % | 50 WV | ceramic ------ | 0.02 |
| ◆C314 | 1-101-886 | 62 pF ±5 % | 50 WV | ceramic ------ | 0.01 |
| C315 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C316 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C317 | 1-101-455 | 0.001 µF ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆C317 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C318 | 1-101-940 | 2.5 pF ±10 % | 50 WV | ceramic ------ | 0.02 |
| ◆C318 | 1-102-959 | 22 pF ±5 % | 50 WV | ceramic ------ | 0.01 |
| C319 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| ◆C319 | 1-102-965 | 39 pF ±5 % | 50 WV | ceramic ------ | 0.01 |
| C320 | 1-121-398 | 10 µF +100 -0 % | 25 WV | electrolytic - | 0.03 |
| ◆C320 | 1-101-834 | 1.8 pF ±0.2 pF | 50 WV | ceramic ------ | 0.02 |
| C321 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C322 | | - | | | |
| ◆C322 | 1-121-471 | 10 µF +100 -10 % | 16 WV | electrolytic - | 0.04 |
| C323 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C324 | 1-101-587 | 1.3 pF ±0.2 pF | 50 WV | ceramic ------ | 0.03 |
| ◆C324 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C325 | | - | | | |
| C326 | | - | | | |
| ◆*C326 | 1-101-587 | 1.3 pF ±0.2 pF | 50 WV | ceramic ------ | 0.03 |
| ◆*C326 | 1-101-576 | 1.5 pF ±0.2 pF | 50 WV | ceramic ------ | 0.02 |
| ◆*C326 | 1-101-834 | 1.8 pF ±0.2 pF | 50 WV | ceramic ------ | 0.02 |
| ◆*C326 | 1-102-935 | 2 pF ±0.25 pF | 50 WV | ceramic ------ | 0.01 |
| ◆*C326 | 1-101-574 | 2.5 pF ±0.2 pF | 50 WV | ceramic ------ | 0.01 |
| ◆*C326 | 1-102-936 | 3 pF ±0.25 pF | 50 WV | ceramic ------ | 0.01 |
| C327 | 1-101-955 | 5 pF ±0.5 pF | 50 WV | ceramic ------ | 0.02 |
| ◆C327 | | - | | | |
| C328 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| ◆C328 | | - | | | |
| C329 | 1-121-402 | 33 µF +100 -0 % | 10 WV | electrolytic - | 0.05 |
| ◆C329 | 1-101-003 | 0.0047 µF +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C330 | 1-101-006 | 0.047 µF +100 -0 % | 50 WV | ceramic ------ | 0.03 |
| ◆C330 | 1-121-402 | 33 µF +100 -10 % | 16 WV | electrolytic - | 0.05 |
| C331 | 1-127-023 | 1 µF ±20 % | 10 WV | electrolytic (alox) ------- | 0.06 |
| ◆C331 | 1-102-942 | 5 pF ±0.5 pF | 50 WV | ceramic ------ | 0.01 |

* Mark to be selected.

| Ref. No. | Part No. | Description | | | | Unit Price |
|---|---|---|---|---|---|---|
| C332 | 1-105-669-12 | 0.0047 µF | ±10 % | 50 WV | mylar -------- | $0.02 |
| ◆ C332 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| C333 | 1-127-024 | 2.2 µF | ±20 % | 10 WV | electrolytic (alox) ------- | 0.07 |
| C333 | 1-121-421 | 220 µF | +100 -10 % | 16 WV | electrolytic - | 0.08 |
| C334 | 1-101-958 | 8 pF | ±0.5 pF | 50 WV | ceramic ------ | 0.01 |
| ◆ C334 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| *C335 | 1-101-837 | 0.5 pF | ±0.2 pF | 50 WV | ceramic ------ | 0.02 |
| *C335 | 1-101-586 | 0.8 pF | ±0.2 pF | 50 WV | ceramic ------ | 0.02 |
| *C335 | 1-101-163 | 1 pF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C335 | | - | | | | |
| C336 | | - | | | | |
| ◆ C336 | 1-127-023 | 1 µF | ±20 % | 10 WV | electrolytic (alox) ------- | 0.06 |
| C337 | 1-127-022 | 0.47 µF | ±20 % | 10 WV | electrolytic (alox) ------- | 0.06 |
| ◆ C337 | 1-105-709-12 | 0.0047 µF | ±10 % | 100 WV | mylar -------- | 0.02 |
| C338 | | - | | | | |
| ◆ C338 | 1-127-024 | 2.2 µF | ±20 % | 10 WV | electrolytic (alox) ------- | 0.07 |
| C339 | | - | | | | |
| ◆ C339 | 1-127-022 | 0.47 µF | ±20 % | 10 WV | electrolytic (alox) ------- | 0.06 |
| C340 | | - | | | | |
| ◆ C340 | 1-102-978 | 220 pF | ±5 % | 50 WV | ceramic ------ | 0.02 |
| C341 | 1-101-455 | 0.001 µF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C341 | 1-101-003 | 0.0047 µF | +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C342 | 1-101-969 | 5 pF | ±0.5 pF | 50 WV | ceramic ------ | 0.03 |
| ◆ C342 | 1-101-003 | 0.0047 µF | +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C401 | 1-103-610 | 240 pF | ±5 % | 50 WV | polystyrene -- | 0.03 |
| ◆ C401 | 1-103-663 | 330 pF | ±10 % | 50 WV | polystyrene -- | 0.03 |
| C402 | 1-103-663 | 330 pF | ±10 % | 50 WV | polystyrene -- | 0.03 |
| ◆ C402 | | - | | | | |
| C403 | 1-101-896 | 100 pF | ±5 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C403 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| C404 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| C405 | 1-101-956 | 6 pF | ±0.5 pF | 50 WV | ceramic ------ | 0.02 |
| ◆ C405 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| C406 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| C407 | | - | | | | |
| ◆ C407 | 1-102-100 | 0.0022 µF | ±20 % | 50 WV | ceramic ------ | 0.02 |

* Mark to be selected.

| Ref. No. | Part No. | Description | | | | Unit Price |
|---|---|---|---|---|---|---|
| C408 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | $0.01 |
| ◆ C408 | 1-101-118 | 0.01 µF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| C409 | 1-101-455 | 0.001 µF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C409 | 1-102-678 | 100 pF | ±5 % | 50 WV | ceramic ------ | 0.03 |
| C410 | 1-101-958 | 8 pF | ±5 pF | 50 WV | ceramic ------ | 0.01 |
| ◆ C410 | | - | | | | |
| C411 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| C412 | 1-101-006 | 0.04 µF | +100 -0 % | 50 WV | ceramic ------ | 0.03 |
| ◆ C412 | 1-121-471 | 10 µF | +100 -10 % | 16 WV | electrolytic - | 0.04 |
| C413 | 1-101-115 | 30 pF | ±5 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C413 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| C414 | 1-101-571 | 140 pF | ±5 % | 50 WV | ceramic ------ | 0.04 |
| ◆ C414 | 1-101-004 | 0.01 µF | +100 -0 % | 50 WV | ceramic ------ | 0.01 |
| C415 | 1-101-423 | 500 pF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C415 | 1-101-896 | 100 pF | ±5 % | 50 WV | ceramic ------ | 0.02 |
| C416 | 1-101-423 | 500 pF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C416 | | - | | | | |
| C417 | 1-121-398 | 10 µF | +100 -0 % | 25 WV | ceramic ------ | 0.03 |
| ◆ C417 | | - | | | | |
| C418 | 1-101-118 | 0.01 µF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C418 | | - | | | | |
| C419 | 1-101-118 | 0.01 µF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C419 | | - | | | | |
| C420 | 1-101-002 | 0.002 µF | +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C420 | | - | | | | |
| C421 | | - | | | | |
| C422 | 1-101-006 | 0.047 µF | +100 -0 % | 50 WV | ceramic ------ | 0.03 |
| ◆ C422 | | - | | | | |
| C423 | 1-101-003 | 0.0047 µF | +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| ◆ C423 | | - | | | | |
| C424 | 1-121-358 | 220 µF | +100 -0 % | 16 WV | electrolytic - | 0.07 |
| ◆ C424 | | - | | | | |
| C501 | 1-121-469 | 10 µF | +100 -0 % | 10 WV | electrolytic - | 0.03 |
| C502 | 1-102-834 | 390 pF | ±10 % | 50 WV | ceramic ------ | 0.02 |
| C503 | 1-113-124 | 0.2 µF | ±10 % | 150 WV | paper -------- | 0.09 |
| C504 | 1-121-246 | 4.7 µF | +100 -0 % | 160 WV | electrolytic - | 0.06 |
| C505 | 1-113-122 | 0.05 µF | ±20 % | 500 WV | paper -------- | 0.07 |
| C506 | 1-121-415 | 100 µF | +100 -0 % | 16 WV | electrolytic - | 0.06 |
| C507 | 1-121-398 | 10 µF | +100 -0 % | 25 WV | electrolytic - | 0.03 |
| C551 | 1-121-398 | 10 µF | +100 -0 % | 25 WV | electrolytic - | 0.03 |

* Mark to be selected.

| Ref. No. | Part No. | Description | | | | Unit Price |
|---|---|---|---|---|---|---|
| C552 | 1-121-421 | 220 µF | +100 -0 % | 16 WV | electrolytic - | $0.08 |
| C553 | 1-121-402 | 33 µF | +100 -0 % | 10 WV | electrolytic - | 0.05 |
| C554 | 1-121-421 | 220 µF | +100 -0 % | 16 WV | electrolytic - | 0.08 |
| C555 | 1-121-409 | 47 µF | +100 -0 % | 16 WV | electrolytic - | 0.04 |
| C556 | 1-105-717-12 | 0.022 µF | ±10 % | 100 WV | mylar -------- | 0.03 |
| C557 | 1-105-717-12 | 0.022 µF | ±10 % | 100 WV | mylar -------- | 0.03 |
| C558 | 1-127-019 | 0.1 µF | ±20 % | 10 WV | electrolytic (alox) ------- | 0.06 |
| C602 | 1-127-094 | 1 µF | ±20 % | 25 WV | electrolytic (alox) ------- | 0.08 |
| C603 | 1-105-715-12 | 0.015 µF | ±10 % | 100 WV | mylar -------- | 0.04 |
| C604 | 1-105-711-12 | 0.0068 µF | ±10 % | 100 WV | mylar -------- | 0.03 |
| C605 | 1-105-721-12 | 0.047 µF | ±10 % | 100 WV | mylar -------- | 0.05 |
| C606 | 1-121-415 | 100 µF | +100 -0 % | 16 WV | electrolytic - | 0.06 |
| C607 | 1-121-396 | 4.7 µF | +100 -0 % | 50 WV | electrolytic - | 0.04 |
| C608 | 1-127-091 | 0.22 µF | ±20 % | 25 WV | electrolytic (alox) ------- | 0.06 |
| C609 | 1-105-721-12 | 0.047 µF | ±10 % | 100 WV | mylar -------- | 0.05 |
| C610 | 1-105-717-12 | 0.022 µF | ±10 % | 100 WV | mylar -------- | 0.03 |
| C611 | 1-121-393 | 3.3 µF | +100 -0 % | 50 WV | electrolytic - | 0.03 |
| C701 | 1-127-232 | 4.7 µF | ±20 % | 25 WV | electrolytic (alox) ------- | 0.16 |
| C702 | 1-131-116 | 10 µF | ±20 % | 16 WV | electrolytic - | 0.35 |
| C703 | 1-121-398 | 10 µF | +100 -0 % | 50 WV | electrolytic - | 0.03 |
| C704 | 1-127-231 | 3.3 µF | ±20 % | 25 WV | electrolytic (alox) ------- | 0.16 |
| C705 | 1-121-420 | 220 µF | +100 -0 % | 10 WV | electrolytic - | 0.07 |
| C706 | 1-121-426 | 470 µF | +100 -0 % | 16 WV | electrolytic - | 0.12 |
| C707 | 1-105-727-12 | 0.15 µF | ±10 % | 100 WV | mylar -------- | 0.13 |
| C709 | 1-105-713-12 | 0.01 µF | ±10 % | 100 WV | mylar -------- | 0.03 |
| C801 | 1-105-715-12 | 0.015 µF | ±10 % | 100 WV | mylar -------- | 0.04 |
| C802 | 1-105-723-12 | 0.068 µF | ±10 % | 100 WV | mylar -------- | 0.06 |
| C803 | 1-105-729-12 | 0.22 µF | ±10 % | 100 WV | mylar -------- | 0.10 |
| *C804 | 1-105-721-12 | 0.047 µF | ±10 % | 100 WV | mylar -------- | 0.05 |
| *C804 | 1-105-725-12 | 0.1 µF | ±10 % | 100 WV | mylar -------- | 0.07 |
| *C804 | 1-105-727-12 | 0.15 µF | ±10 % | 100 WV | mylar -------- | 0.13 |
| *C804 | 1-105-729-12 | 0.22 µF | ±10 % | 100 WV | mylar -------- | 0.10 |
| C805 | 1-105-725-12 | 0.1 µF | ±10 % | 100 WV | mylar -------- | 0.07 |

* Mark to be selected.

| Ref. No. | Part No. | Description | | | | Unit Price |
|---|---|---|---|---|---|---|
| C806 | 1-121-421 | 220 µF | +100 -0 % | 16 WV | electrolytic - | $0.08 |
| C807 | 1-105-292-12 | 0.055 µF | ±10 % | 250 WV | mylar -------- | 0.10 |
| C808 | 1-105-274-12 | 0.01 µF+0.005 µF | | 200 WV | mylar -------- | 0.12 |
| C809 | 1-105-753-12 | 0.01 µF | ±10 % | 100 WV | mylar -------- | 0.04 |
| C811 | 1-113-122 | 0.05 µF | ±20 % | 500 WV | paper -------- | 0.07 |
| C812 | 1-113-122 | 0.05 µF | ±20 % | 500 WV | paper -------- | 0.07 |
| C813 | 1-113-122 | 0.05 µF | ±20 % | 500 WV | paper -------- | 0.07 |
| C814 | 1-113-122 | 0.05 µF | ±20 % | 500 WV | paper -------- | 0.07 |
| C818 | 1-101-845 | 1000 pF | +100 -0 % | 500 WV | ceramic ------ | 0.02 |
| C819 | 1-101-455 | 1000 pF | ±20 % | 50 WV | ceramic ------ | 0.02 |
| C901 | 1-121-555 | 4000 µF | +100 -15 % | 15 WV | electrolytic - | 0.38 |
| C902 | 1-119-106 | 100 µF | ±20 % | 16 WV | electrolytic - | 0.04 |
| C903 | 1-121-555 | 4000 µF | +100 -15 % | 15 WV | electrolytic - | 0.38 |
| C904 | 1-101-003 | 0.005 µF | +100 -0 % | 50 WV | ceramic ------ | 0.02 |
| C905 | 1-101-003 | 0.005 µF | +100 -0 % | 50 WV | ceramic ------ | 0.02 |

## Resistors

All resistors are ±5 %, ERD14T, carbon unless otherwise specified.

| | | | | | | |
|---|---|---|---|---|---|---|
| R301 | 1-248-629 | 15 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| ◆R301 | 1-246-627 | 12 Ω | ---------- | ---------- | ---------- | 0.02 |
| R302 | | - | | | | |
| ◆R302 | 1-248-629 | 15 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| R303 | 1-248-627 | 12 Ω | | ERD14V | ---------- | 0.02 |
| ◆R303 | 1-246-649 | 100 Ω | ---------- | ---------- | ---------- | 0.02 |
| R304 | 1-248-649 | 100 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| ◆R304 | 1-246-669 | 680 Ω | ---------- | ---------- | ---------- | 0.02 |
| R305 | 1-248-659 | 270 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| ◆R305 | 1-246-705 | 22 kΩ | ---------- | ---------- | ---------- | 0.02 |
| R306 | 1-248-657 | 220 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| ◆R306 | 1-246-659 | 270 Ω | ---------- | ---------- | ---------- | 0.02 |
| R307 | 1-248-665 | 470 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| ◆R307 | 1-246-657 | 220 Ω | ---------- | ---------- | ---------- | 0.02 |
| R308 | 1-248-656 | 200 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| ◆R308 | 1-246-657 | 220 Ω | ---------- | ---------- | ---------- | 0.02 |
| R309 | 1-248-657 | 220 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| ◆R309 | 1-246-663 | 390 Ω | ---------- | ---------- | ---------- | 0.02 |
| R310 | 1-248-659 | 270 Ω | ±10 % | ERD14V | ---------- | 0.02 |
| ◆R310 | 1-246-705 | 22 kΩ | ---------- | ---------- | ---------- | 0.02 |

| Ref. No. | Part No. | Description | Unit Price |
|---|---|---|---|
| R311 | 1-248-658 | 240 Ω ±10 % ERD14V | $0.02 |
| ◆ R311 | 1-246-659 | 270 Ω | 0.02 |
| R312 | 1-248-653 | 150 Ω ±10 % ERD14V | 0.02 |
| ◆ R312 | 1-246-696 | 9100 Ω | 0.02 |
| R313 | 1-248-696 | 9100 Ω ±10 % ERD14V | 0.02 |
| ◆ R313 | 1-246-675 | 1200 Ω | 0.02 |
| R314 | 1-248-675 | 1200 Ω ±10 % ERD14V | 0.02 |
| ◆ R314 | 1-246-651 | 120 Ω | 0.02 |
| R315 | 1-248-651 | 120 Ω ±10 % ERD14V | 0.02 |
| ◆ R315 | 1-246-659 | 270 Ω | 0.02 |
| R316 | 1-246-653 | 150 Ω | 0.02 |
| ◆ R316 | 1-246-646 | 75 Ω | 0.02 |
| R317 | 1-248-646 | 75 Ω ±10 % ERD14V | 0.02 |
| ◆ R317 | 1-246-680 | 2 kΩ | 0.02 |
| R318 | 1-248-680 | 2 kΩ ±10 % ERD14V | 0.02 |
| ◆ R318 | 1-246-655 | 180 Ω | 0.02 |
| R319 | 1-248-655 | 180 Ω ±10 % ERD14V | 0.02 |
| ◆ R319 | 1-246-690 | 5100 Ω | 0.02 |
| R320 | 1-248-690 | 5100 Ω ±10 % ERD14V | 0.02 |
| ◆ R320 | 1-246-682 | 2400 Ω | 0.02 |
| R321 | 1-248-681 | 2200 Ω ±10 % ERD14V | 0.02 |
| ◆ R321 | 1-246-671 | 820 Ω | 0.02 |
| R322 | 1-248-671 | 820 Ω ±10 % ERD14V | 0.02 |
| ◆ R322 | 1-244-634 | 24 Ω RD1/4CH | 0.02 |
| R323 | 1-248-687 | 3900 Ω ±10 % ERD14V | 0.02 |
| ◆ R323 | 1-246-660 | 300 Ω ±10 % | 0.02 |
| R324 | 1-248-665 | 470 Ω ERD14V | 0.02 |
| ◆ R324 | 1-246-668 | 620 Ω | 0.02 |
| R325 | 1-246-677 | 1500 Ω | 0.02 |
| *R326 | 1-248-706 | 24 kΩ ERD14V | 0.02 |
| *R326 | 1-248-707 | 27 kΩ ERD14V | 0.02 |
| *R326 | 1-248-708 | 30 kΩ ERD14V | 0.02 |
| *R326 | 1-248-710 | 36 kΩ ERD14V | 0.02 |
| *R326 | 1-248-711 | 39 kΩ ERD14V | 0.02 |
| *R326 | 1-248-712 | 43 kΩ ERD14V | 0.02 |
| *R326 | 1-248-713 | 47 kΩ ERD14V | 0.02 |
| *R326 | 1-248-714 | 51 kΩ ERD14V | 0.02 |
| *R326 | 1-248-715 | 56 kΩ ERD14V | 0.02 |
| ◆ R326 | 1-246-666 | 510 Ω | 0.02 |
| R327 | 1-248-700 | 13 kΩ ERD14V | 0.02 |
| ◆ *R327 | 1-246-706 | 24 kΩ | 0.02 |
| ◆ *R327 | 1-246-707 | 27 kΩ | 0.02 |

* Mark to be selected.

| Ref. No. | Part No. | Description | Unit Price |
|---|---|---|---|
| ◆ *R327 | 1-246-708 | 30 kΩ ---------- | $0.02 |
| ◆ *R327 | 1-246-709 | 33 kΩ ---------- | 0.02 |
| ◆ *R327 | 1-246-710 | 36 kΩ ---------- | 0.02 |
| ◆ *R327 | 1-246-711 | 39 kΩ ---------- | 0.02 |
| ◆ *R327 | 1-246-712 | 43 kΩ ---------- | 0.02 |
| ◆ *R327 | 1-246-713 | 47 kΩ ---------- | 0.02 |
| ◆ *R327 | 1-246-714 | 51 kΩ ---------- | 0.02 |
| ◆ *R327 | 1-246-715 | 56 kΩ ---------- | 0.02 |
| R328 | 1-248-655 | 180 Ω ±10 % ERD14V ---------- | 0.02 |
| ◆ R328 | 1-246-700 | 13 kΩ ---------- | 0.02 |
| R329 | 1-248-665 | 470 Ω ±10 % ERD14V ---------- | 0.02 |
| ◆ R329 | 1-246-666 | 510 Ω ---------- | 0.02 |
| R330 | 1-248-683 | 2700 Ω ERD14V ---------- | 0.02 |
| ◆ R330 | 1-248-655 | 180 Ω ERD14V ---------- | 0.02 |
| R331 | 1-248-671 | 820 Ω ±10 % ERD14V ---------- | 0.02 |
| ◆ R331 | 1-248-657 | 220 Ω ERD14V ---------- | 0.02 |
| R332 | 1-248-657 | 220 Ω ERD14V ---------- | 0.02 |
| ◆ R332 | 1-246-657 | 220 Ω ---------- | 0.02 |
| *R333 | 1-248-703 | 18 kΩ ERD14V ---------- | 0.02 |
| *R333 | 1-248-704 | 20 kΩ ERD14V ---------- | 0.02 |
| *R333 | 1-248-705 | 22 kΩ ERD14V ---------- | 0.02 |
| *R333 | 1-248-706 | 24 kΩ ERD14V ---------- | 0.02 |
| ◆ *R333 | 1-246-701 | 15 kΩ ---------- | 0.02 |
| ◆ *R333 | 1-246-702 | 16 kΩ ---------- | 0.02 |
| ◆ *R333 | 1-246-703 | 18 kΩ ---------- | 0.02 |
| ◆ *R333 | 1-246-704 | 20 kΩ ---------- | 0.02 |
| ◆ *R333 | 1-246-705 | 22 kΩ ---------- | 0.02 |
| ◆ *R333 | 1-246-706 | 24 kΩ ---------- | 0.02 |
| R334 | 1-248-666 | 510 Ω ERD14V ---------- | 0.02 |
| ◆ R334 | 1-246-680 | 2700 Ω ---------- | 0.02 |
| R335 | 1-248-666 | 510 Ω ERD14V ---------- | 0.02 |
| ◆ R335 | 1-246-671 | 820 Ω ---------- | 0.02 |
| R336 | | - | |
| ◆ R336 | 1-246-679 | 1800 Ω ---------- | 0.02 |
| R401 | 1-248-657 | 220 Ω ERD14V ---------- | 0.02 |
| ◆ R401 | 1-246-646 | 75 Ω ---------- | 0.02 |
| R402 | 1-248-664 | 430 Ω ERD14V ---------- | 0.02 |
| ◆ R402 | 1-246-664 | 430 Ω ---------- | 0.02 |
| R403 | 1-248-706 | 24 kΩ ±10 % ERD14V ---------- | 0.02 |
| ◆ R403 | 1-246-661 | 330 Ω ---------- | 0.02 |
| R404 | 1-248-686 | 3600 Ω ±10 % ERD14V ---------- | 0.02 |
| ◆ R404 | 1-246-649 | 100 Ω ---------- | 0.02 |

* Mark to be selected.

| Ref. No. | Part No. | Description | | | Unit Price |
|---|---|---|---|---|---|
| R405 | 1-248-673 | 1 kΩ | ±10 % | ERD14V | $0.02 |
| ◆R405 | 1-246-687 | 3900 Ω | | | 0.02 |
| R406 | 1-248-649 | 100 Ω | ±10 % | ERD14V | 0.02 |
| ◆R406 | 1-248-715 | 56 kΩ | | | 0.02 |
| *R407 | 1-203-892 | 3600 Ω | | RD1/16L | 0.02 |
| *R407 | 1-203-497 | 3900 Ω | | RD1/16L | 0.02 |
| *R407 | 1-203-185 | 4700 Ω | | RD1/16L | 0.02 |
| *R407 | 1-204-345 | 5100 Ω | | RD1/16L | 0.02 |
| *R407 | 1-203-186 | 5600 Ω | | RD1/16L | 0.02 |
| *R407 | 1-203-187 | 6800 Ω | | RD1/16L | 0.02 |
| *R407 | 1-203-189 | 8200 Ω | | RD1/16L | 0.02 |
| *R407 | 1-203-190 | 10 kΩ | | RD1/16L | 0.02 |
| ◆R407 | 1-246-673 | 1 kΩ | | | 0.02 |
| R408 | 1-248-694 | 7500 Ω | ±10 % | ERD14V | 0.02 |
| ◆R408 | | - | | | |
| R409 | 1-248-685 | 3300 Ω | ±10 % | ERD14V | 0.02 |
| ◆R409 | 1-248-632 | 20 Ω | | ERD14V | 0.02 |
| R410 | 1-248-670 | 750 Ω | ±10 % | ERD14V | 0.02 |
| ◆R410 | | - | | | |
| R411 | 1-248-673 | 1 kΩ | ±10 % | ERD14V | 0.02 |
| ◆R411 | | - | | | |
| R412 | 1-204-345 | 5100 Ω | | RD1/16L | 0.02 |
| ◆R412 | | - | | | |
| R413 | 1-248-649 | 100 Ω | ±10 % | ERD14V | 0.02 |
| ◆R413 | | - | | | |
| R414 | 1-248-675 | 1200 Ω | | ERD14V | 0.02 |
| ◆R414 | | - | | | |
| R415 | 1-248-675 | 1200 Ω | | ERD14V | 0.02 |
| ◆R415 | | - | | | |
| R416 | 1-248-685 | 3300 Ω | | ERD14V | 0.02 |
| ◆R416 | | - | | | |
| R417 | 1-248-685 | 3300 Ω | | ERD14V | 0.02 |
| ◆R417 | | - | | | |
| R418 | 1-248-641 | 47 Ω | ±10 % | ERD14V | 0.02 |
| ◆R418 | | - | | | |
| R419 | 1-248-715 | 56 kΩ | ±10 % | ERD14V | 0.02 |
| ◆R419 | | - | | | |
| R420 | 1-248-673 | 1 kΩ | ±10 % | ERD14V | 0.02 |
| ◆R420 | | - | | | |
| R501 | 1-246-697 | 10 kΩ | | | 0.02 |
| *R502 | 1-246-712 | 43 kΩ | | | 0.02 |

* Mark to be selected.

| Ref. No. | Part No. | Description | Unit Price |
|---|---|---|---|
| *R502 | 1-246-713 | 47 kΩ | $0.02 |
| *R502 | 1-246-714 | 51 kΩ | 0.02 |
| *R502 | 1-246-715 | 56 kΩ | 0.02 |
| *R502 | 1-246-716 | 62 kΩ | 0.02 |
| *R502 | 1-246-717 | 68 kΩ | 0.02 |
| R503 | 1-246-651 | 120 Ω | 0.02 |
| R504 | 1-246-690 | 5100 Ω | 0.02 |
| R506 | 1-246-725 | 150 kΩ | 0.02 |
| R507 | 1-246-679 | 1800 Ω | 0.02 |
| R509 | 1-246-714 | 51 kΩ | 0.02 |
| R551 | 1-246-697 | 10 kΩ | 0.02 |
| R552 | 1-246-697 | 10 kΩ | 0.02 |
| R553 | 1-246-679 | 1800 Ω | 0.02 |
| R554 | 1-246-612 | 3 Ω | 0.02 |
| R555 | 1-246-673 | 6800 Ω | 0.02 |
| R556 | 1-246-675 | 1200 Ω | 0.02 |
| R557 | 1-246-641 | 47 Ω | 0.02 |
| R558 | 1-246-655 | 180 Ω | 0.02 |
| R559 | 1-246-659 | 270 Ω | 0.02 |
| R560 | 1-246-675 | 1200 Ω | 0.02 |
| R561 | 1-246-612 | 3 Ω | 0.02 |
| R562 | 1-246-618 | 5.1 Ω | 0.02 |
| R563 | 1-246-631 | 18 Ω | 0.02 |
| R564 | 1-246-655 | 180 Ω | 0.02 |
| R601 | 1-246-642 | 51 Ω | 0.02 |
| R602 | 1-246-656 | 200 Ω | 0.02 |
| R603 | 1-246-697 | 10 kΩ | 0.02 |
| R604 | 1-246-718 | 100 kΩ | 0.02 |
| R605 | 1-246-669 | 680 Ω | 0.02 |
| R606 | 1-246-647 | 82 Ω | 0.02 |
| R607 | 1-246-688 | 4300 Ω | 0.02 |
| R608 | 1-246-685 | 3300 Ω | 0.02 |
| R609 | 1-250-873 | 1 kΩ RD12T | 0.02 |
| R610 | 1-246-677 | 1500 Ω | 0.02 |
| R611 | 1-246-694 | 7500 Ω | 0.02 |
| R613 | 1-246-667 | 560 Ω | 0.02 |
| R614 | 1-246-662 | 360 Ω | 0.02 |
| R615 | 1-246-664 | 430 Ω | 0.02 |
| R616 | 1-246-684 | 3 kΩ | 0.02 |
| R617 | 1-246-680 | 2 kΩ | 0.02 |

* Mark to be selected.

| Ref. No. | Part No. | Description | Unit Price |
|---|---|---|---|
| R701 | 1-246-663 | 390 Ω | $0.02 |
| R702 | 1-246-688 | 4300 Ω | 0.02 |
| R703 | 1-246-677 | 1500 Ω | 0.02 |
| R704 | 1-246-629 | 15 Ω | 0.02 |
| R705 | 1-246-688 | 4300 Ω | 0.02 |
| R706 | 1-246-688 | 4300 Ω | 0.02 |
| R707 | 1-246-696 | 9100 Ω | 0.02 |
| R708 | 1-246-680 | 2 kΩ | 0.02 |
| R709 | 1-246-680 | 2 kΩ | 0.02 |
| R710 | 1-246-695 | 8200 Ω | 0.02 |
| *R711 | 1-246-678 | 1600 Ω | 0.02 |
| *R711 | 1-246-679 | 1800 Ω | 0.02 |
| *R711 | 1-246-680 | 2 kΩ | 0.02 |
| *R711 | 1-246-681 | 2200 Ω | 0.02 |
| R712 | 1-246-660 | 300 Ω | 0.02 |
| R713 | 1-207-018 | 3 Ω RW1/4RL wire wound | 0.01 |
| R714 | 1-207-018 | 3 Ω RW1/4RL wire wound | 0.01 |
| R715 | 1-246-656 | 200 Ω | 0.02 |
| R716 | 1-246-702 | 15 kΩ | 0.02 |
| R801 | 1-246-673 | 1 kΩ | 0.02 |
| R803 | 1-246-649 | 100 Ω | 0.02 |
| R804 | 1-246-662 | 360 Ω | 0.02 |
| R806 | 1-246-697 | 10 kΩ | 0.02 |
| R807 | 1-246-691 | 5600 Ω | 0.02 |
| R808 | 1-246-694 | 7500 Ω | 0.02 |
| R811 | 1-202-621 | 100 kΩ ±10 % RC1/2, composition | 0.02 |
| R812 | 1-202-621 | 100 kΩ ±10 % RC1/2, composition | 0.02 |
| R813 | 1-202-649 | 1.5 MΩ ±10 % RC1/2, composition | 0.02 |
| R814 | 1-246-732 | 300 kΩ | 0.02 |
| R901 | 1-201-676 | 750 kΩ ±10 % RC1/2L, composition | 0.02 |
| R902 | 1-206-056 | 120 Ω ±10 % 2 W, metal oxide | 0.04 |

* Mark to be selected.

| Ref. No. | Part No. | Description | Unit Price |
|---|---|---|---|
| VR301 | 1-221-998 | 500 Ω-B, adjustable (AGC) | $0.14 |
| VR301 | 1-222-805 | 470 Ω-B, adjustable (AGC) | 0.12 |
| VR501 | 1-222-335 | 250 kΩ-B, variable (Brightness) | 0.11 |
| VR502 | 1-222-337 | 3 kΩ-C, variable (Contrast) | 0.13 |
| VR551 | 1-222-340 | 5 kΩ-D, variable (with SW) (Volume) | 0.33 |
| VR601 | 1-222-184 | 1 kΩ-B, variable (Hor. Hold) | 0.14 |
| VR701 | 1-222-336 | 2 kΩ-B, variable (Ver. Hold) | 0.13 |
| VR702 | 1-221-349 | 5 kΩ-B, adjustable (Ver. Linearity) | 0.09 |
| VR703 | 1-221-349 | 5 kΩ-B, adjustable (Ver. Height) | 0.09 |
| VR801 | 1-221-351 | 600 kΩ-B, adjustable (Focus) | 0.08 |

## Miscellaneous

| | | | |
|---|---|---|---|
| DET | 1-425-518 | Detector Block | 0.13 |
| DET | 1-425-636 | Detector Block | 0.15 |
| DY | 1-451-003-09 | Deflection Yoke Ass'y | 1.75 |
| F901 | 1-532-118-12 | Fuse, 1.6 A | 0.06 |
| | 1-501-118-11 | Telescopic Antenna | 0.92 |
| | 1-502-100 | Speaker | 0.52 |
| | 1-506-108 | SV-pin | 0.01 |
| | 1-507-166 | Jack, external antenna | 0.16 |
| | 1-507-174-33 | Jack, earphone, twin | 0.10 |
| | 1-507-901-12 | Jack Nut | 0.01 |
| | 1-508-156-41 | Power Plug with Switch | 0.24 |
| | 1-526-084-21 | Socket, picture tube | 0.37 |
| | 1-536-107 | Lug Terminal Board, 1-1 P | 0.01 |
| | 1-417-019-32 | U-V Separator Ass'y | 0.62 |
| | 1-534-379-41 | Output Cable, IF | 0.13 |
| | 8-731-105-10 | Picture Tube (140CB4) | 8.03 |

| Part No. | Description | Unit Price |
|---|---|---|
| | IV. CARTON & ACCESSORIES | |
| 4-014-747-01 | Packing Carton | $0.19 |
| 4-014-749 | Cushion | 0.10 |
| 4-014-750 | Polyethylene Bag, cabinet | 0.09 |
| 3-813-651 | Color Label | 0.01 |
| X-44910-02-1 | Warranty Card Ass'y | 0.08 |
| X-40147-11-1 | Card Ass'y | 0.06 |
| X-44900-03 | Polishing Cloth in Polyethylene Bag | 0.03 |
| 4-495-257-11 | Instruction Manual | 0.08 |
| 4-490-014-10 | Service Station List | 0.03 |
| 4-002-839 | IBM Card | 0.01 |
| 1-504-034-22 | Earphone (ME-20A) | 0.14 |
| 1-534-519-17 | Cord, power supply | 0.38 |

SONY CORPORATION

# COMPLETE SPARE PARTS LIST FOR BP-21

OCTOBER, 1971

| Part No. | Description | Unit Price |
|---|---|---|
| X-20411-03 | Terminal Board Ass'y, left | $0.10 |
| X-20411-04 | Terminal Board Ass'y, right | 0.10 |
| X-20765-01 | Battery Case Ass'y, upper | 0.57 |
| X-20765-02 | Battery Case Ass'y, lower | 0.52 |
| Y-44014-32-1 | VCP-1W | 0.93 |
| 1-534-439-62 | Cord, 4 P power supply | 0.21 |
| 2-076-511-01 | Screw, mounting case | 0.14 |
| 2-076-512 | Nameplate | 0.07 |
| 2-076-513 | Special Screw | 0.07 |
| 2-076-514-01 | Packing Carton | 0.12 |
| 2-076-515 | Master Carton | 0.19 |
| 2-076-516 | Polyethylene Bag | 0.05 |
| 2-076-517 | Cushion | 0.05 |
| 2-076-518 | Instruction Label | 0.02 |
| 3-790-913-11 | Instruction Manual | 0.02 |
| 3-793-183 | Inspection Tag | 0.01 |
| 7-624-108-01 | Retainer, E-4 | 0.50/100 |
| 7-633-110-41 | Clamp, power supply cord | 0.05 |