

**START****STEP-BY-STEP ASSEMBLY**

( ) Position the controller circuit board printed side up as shown. **IMPORTANT:** This circuit board has foil on both sides. **DO NOT** solder to the foil on the printed (component) side of the board.

**NOTE:** Only a portion of the circuit board is shown in some Pictorials. The small "Identification Drawing" at the top of the page shows the area of the board to be assembled.

**NOTE:** When you install a diode, always align its banded end with the band on the board. See Detail 10-1A.

( ) D706: 1N4149 diode (#56-56).

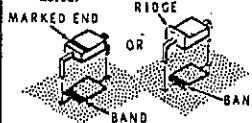
#56-648 DIODE NO LONGER AVAILABLE

The HV109 varactor diodes at D101, D301, D351, D701, and D701B are changed:

From #56-648 to #56-674.

This new diode is an MV209 and has a different case style. Install it as shown at the right. Use this new diode when a replacement is needed.

( ) D701: MV109 diode (#56-648). Solder the leads to the foil when you install it. Check the leads to make sure they are well soldered.



( ) D701B: MV109 diode (#56-648). There is no outline for this diode. Be sure to position the marked end as shown.

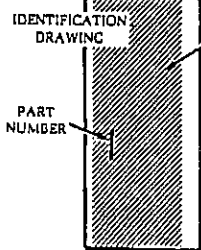
( ) L701: 100  $\mu$ H choke (#45-604, brn-blk-brn).

( ) D702: 1N4149 diode (#56-56).

( ) D708: 1N4002 diode (#57-65).

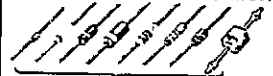
( ) D711: 1N4149 diode (#56-56).

( ) Solder the leads to the foil and cut off the excess lead lengths.



The steps performed in this Pictorial are in this area of the circuit board.

**NOTE:** DIODES MAY BE SUPPLIED IN ANY OF THE FOLLOWING SHAPES.



Detail 10-1A

**CONTINUE**

**NOTE:** When you install an IC socket, be sure the index mark is still visible after the socket is installed. Then solder the pins to the foil.



PIN 1

INDEX MARK

sets at U712 and

18-pin socket as

note the location

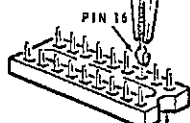
then grasp pin 18

with long-nose

pliers and pull the pin all

the way out of the socket. The pin

will not be used.



( ) Install the modified socket at U703. Be sure to match the notch on this socket with the index mark on the circuit board.

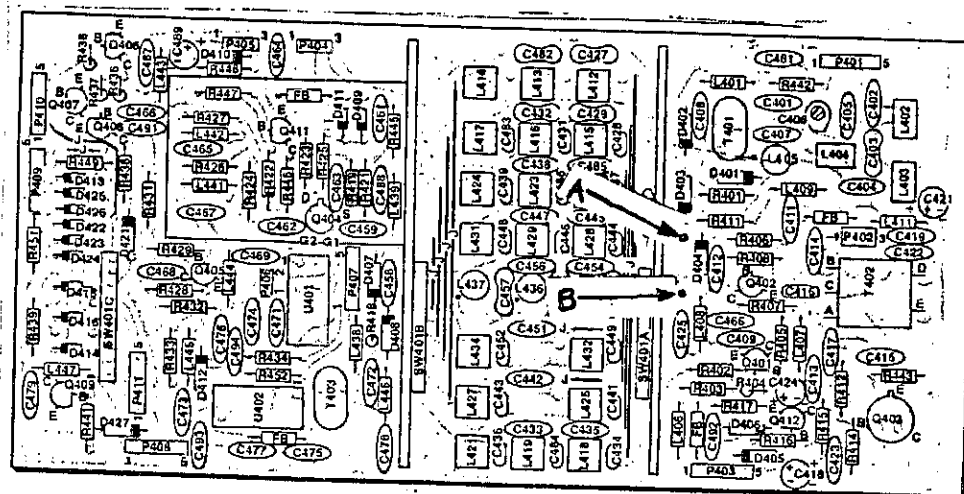
( ) 18-pin IC sockets at U706 and U709.

( ) 14-pin IC sockets at U711, U702, U708, and U701.

( ) 8-pin IC sockets at U713, U707, and U704.

( ) 40-pin IC socket at U710.

PICTORIAL 10-1





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TLX 72-9421

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## HW-5400 TRANSCEIVER MODIFICATIONS COMPLETE LIST

### Filter Circuit Board

- 1. Change D555 to 6.8V zener diode, part number 56-637.

### Audio Circuit Board

- 1. Change R913 to 68k ohm, part number 6-683-12.
- 2. Change R994 and R995 to 1000 ohm, part number 6-102-12.
- 3. Change C929 to 330 pF, part number 21-722.
- 4. Remove C908 and replace with a jumper wire. - Check this
- 5. Remove C915 and discard (4.7 uF).

### High VCO Assembly

- 1. Change R367 to 33 ohm, part number 6-330-12.

### BFO Circuit Board

- 1. Change C811 to 220 pF, part number 20-120.
- 2. Change C817 and C821 to 27 pF, part number 21-6.
- 3. Change C819 to .01 uF, part number 21-761.
- 4. Change L804 to 10 uH RF choke, part number 45-57.

### Controller Circuit Board

- 1. Add diode D701B as shown on the attached sheet. - Check this
- 2. Change C703 and C704 to 220 pF, part number 20-120.
- 3. Change Q701 and Q702 to part number 417-154.
- 4. Note .... DO NOT change C702 .... it should be 3.2 - 18 pF trimmer (blue screw) part number 31-71.

### IF Circuit Board

- 1. Change R1151 to 1500 ohm, part number 6-152-12.
- 2. Change R1145 to 2200 ohm, part number 6-222-12.

### RF Circuit Board

- 1. Add the series resonant circuit as shown on the attached sheet, part number 45-631, 21-111, 6-470-12.
- 2. Add CW keying circuit as shown on the attached sheet, part number 6-122-12, 25-864, 25-922, 56-56.
- 3. Add ferrite bead to base of Q401 and base of Q402, part number 475-16. Check
- 4. Remove R419 and discard (100k ohm). - Check this

### AIC Circuit Board

- 1. Change D654 to 30V diode, part number 56-64.

### Power Amplifier Circuit Board

- 1. Add a .01 uF capacitor as shown on the attached sheet, part number 21-176.