

SECTION 11 OPTIONS INSTALLATION

WARNING: Disconnect the power cable from the IC-751A before performing any work.

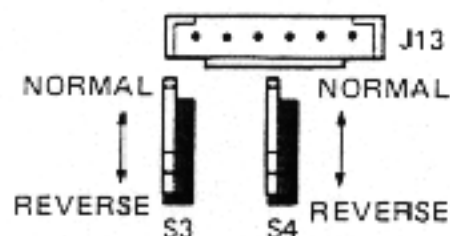
11 - 1 OPTIONAL FILTERS

• FILTER REVERSE SWITCHES

The [FILTER] SWITCH on the front panel of the IC-751A selects two receive filter systems for SSB, CW, RTTY or AM mode when it is switched to either the IN or OUT position. The IN/OUT relationship of the [FILTER] SWITCH may be reversed by using the internal FILTER REVERSE SWITCHES on the MAIN UNIT.

S3: Reverses the IN and OUT positions of the [FILTER] SWITCH when using AM mode.

S4: Reverses the IN and OUT positions of the [FILTER] SWITCH when using CW or RTTY mode.



(1) FL-52A, FL-53A FILTER INSTALLATION

These are 455kHz filters for use with CW NARROW or RTTY NARROW mode.

No special tools are required to successfully complete the installation of these filters. Install them at position [F] in the photo on p.11-5.

- 1) First, remove the top cover.
- 2) Insert the optional FL-52A or FL-53A into position [F] as shown in the photo on p.11-5.
- 3) Check the operation of the filter using the FILTER COMBINATIONS TABLE for a guide (p.11-5).

(2) FL-63A FILTER INSTALLATION

This is a 9MHz narrow filter for CW or RTTY mode. The filter replaces the standard FL-32A which is supplied with the IC-751A. Install this filter at [A] position as shown on p.11-5.

- 1) Remove the transceiver top cover, then the 11 screws from the MAIN UNIT.
- 2) Lift the right edge of the MAIN UNIT upwards taking care not to damage the sockets and plugs that are installed on the unit.

- 3) The filter must be installed at position [A] in the photo as shown on p.11-5.

Remove the FL-32A original filter from the MAIN UNIT using a de-soldering braid.

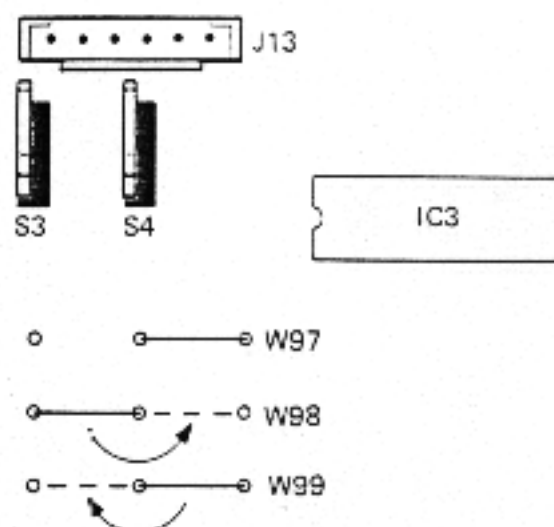
- 4) Install the FL-63A at position [A]. Orient the label on the filter in the same manner as the other filters already installed.

- 5) Bend the leads and mounting tabs flush against the opposite side of the printed circuit board, and solder. Trim the ends of the leads with diagonal cutters.

- 6) Replace the MAIN UNIT and screws, and the top cover.

There are no adjustments required after installation is completed.

(3) FL-70 FILTER INSTALLATION



The FL-70 is a 9MHz wide filter for SSB mode which may be installed for either of the following two reasons:

- a) To replace the standard FL-80.
 - b) To replace the standard FL-32A.
- a: Use the FL-63A installation method given previously. Place the FL-70 in the position where the FL-80 is now installed.
 - b: 1) Use the FL-63A installation method given previously. Place the FL-70 in the position where the FL-32A is now installed.

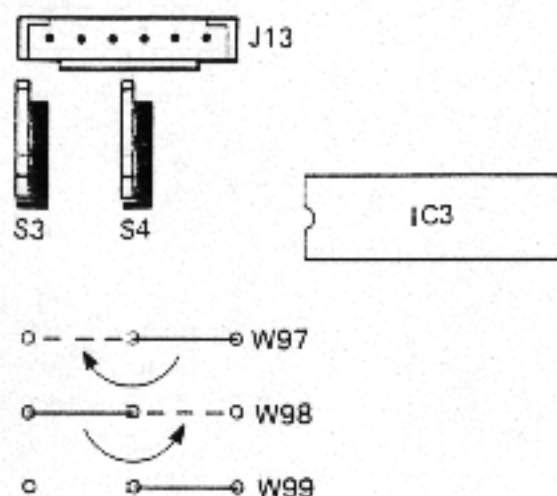
- 2) The FL-70 operates only in CW or RTTY mode if it is installed in the FL-32A location.

Therefore, perform the following modification so the FL-70 may or may not be used as desired.

- 3) W98 and W99 jumper wires on the MAIN UNIT must be changed as shown in the diagram above.
- 4) The FL-70 and FI14 (CFJ-455K5) can now be selected by pushing the [FILTER] SWITCH on the front panel IN. The receive bandwidth will be 2.8kHz.

FL-80 and FL-44A can be selected by placing the [FILTER] SWITCH in the OUT position. The bandwidth will then be 2.3kHz.

(4) FL-33 INSTALLATION



This is a 9MHz filter for AM mode. FL-33 replaces FL-32A and requires the relocation of jumper wires.

- 1) Use the FL-63A installation method given previously. Install FL-33 where FL-32A is now installed.
- 2) Change the jumper wires as shown in the diagram above.
- 3) This installation causes FL-33 to be selected whether the [FILTER] SWITCH is in the IN or OUT position when using AM mode. Only 455kHz filters will be changed by the [FILTER] SWITCH.

11 - 2 OPTIONAL IC-PS35 INTERNAL POWER SUPPLY

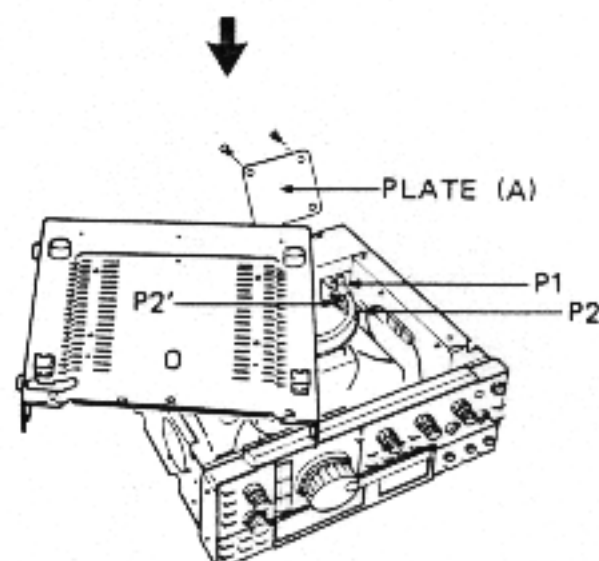
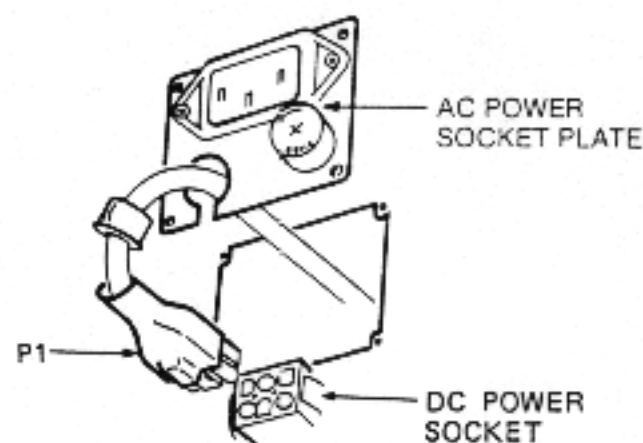
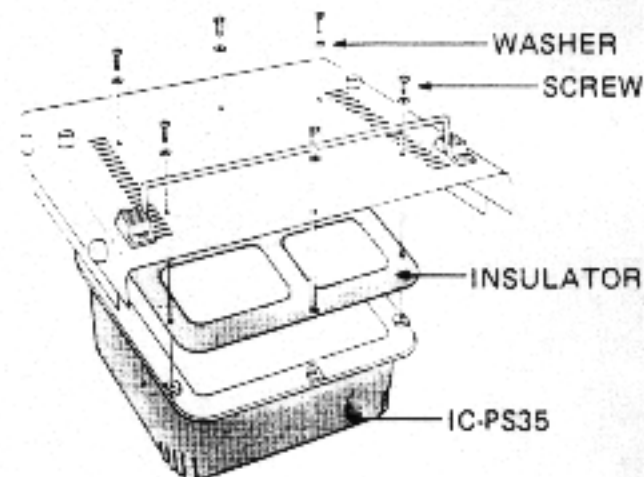
WARNING: Disconnect the power cable from the IC-751A before performing any work.

• INSTALLATION

Refer to diagrams at right.

- 1) Turn the transceiver upside down. Remove PLATE (A) attached to the rear panel by unscrewing the four screws. These screws will be used later.
- 2) Attach the IC-PS35 INTERNAL POWER SUPPLY to the bottom cover with the supplied screws and insulating washers. Also insert the insulating gasket between the IC-PS35 and the bottom cover.
- 3) The IC-PS35 comes with an AC POWER SOCKET PLATE. Pass the DC power cable attached to P1 through the hole on the AC POWER SOCKET PLATE then insert the bushing into the hole. Exchange the AC POWER SOCKET PLATE at the PLATE (A) position using the screws which previously held PLATE (A). The AC POWER SOCKET should be near the bottom of the transceiver.

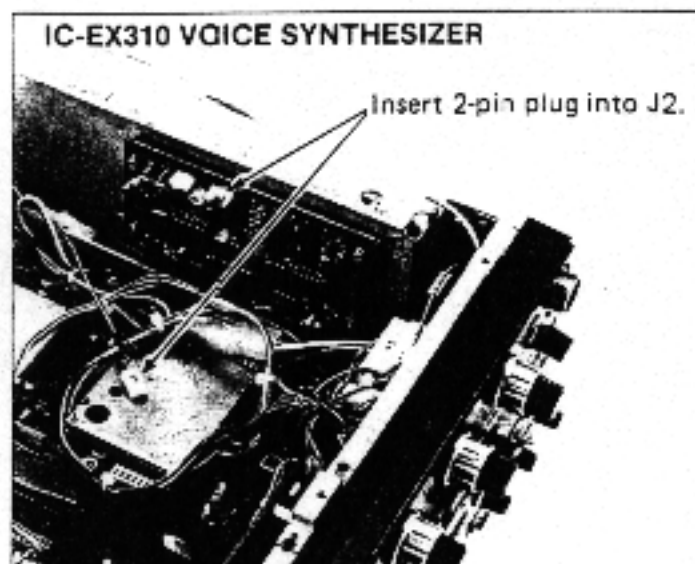
- 4) Pass the P2' connector from the AC POWER SOCKET unit to the inner chassis through the hole in the rear chassis. Connect P2' with the P2 connector from the IC-PS35.
- 5) Position the cables in the rear chassis. This prevents magnetic coupling between the cables and the VCO coil cores.
- 6) Replace the top and bottom covers of the transceiver. Plug P1 from the IC-PS35 into the DC POWER SOCKET on the transceiver.
- 7) Connect the supplied AC power cable into the newly installed AC POWER SOCKET on the rear panel of the IC-751A. Connect the AC power plug into an AC power outlet.
- 8) Push the IC-751A [POWER] SWITCH to apply power to the transceiver.



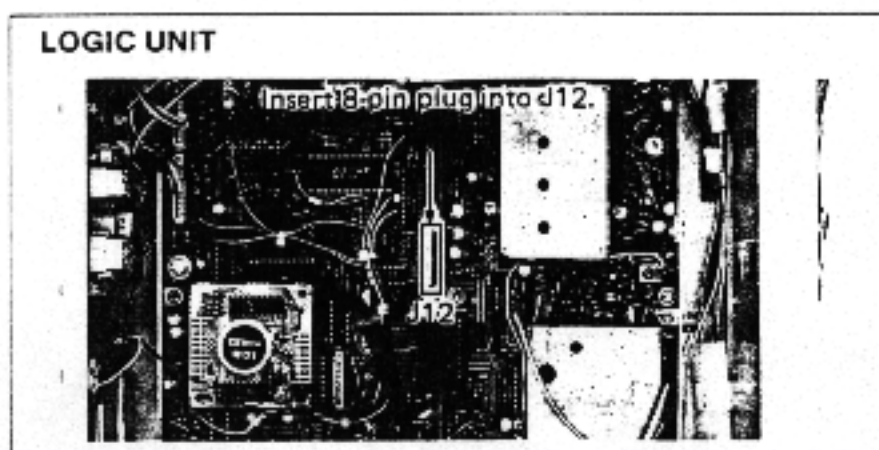
11 - 3 OPTIONAL IC-EX310 VOICE SYNTHESIZER UNIT

After installation the voice synthesizer announces the displayed frequency when the [SPEECH] SWITCH on the front panel is pushed.

• INSTALLATION



- 1) Turn the transceiver upside down.
- 2) Install the IC-EX310 unit in the position on the chassis as shown in the photo above using the four supplied screws. Insert the 2-pin plug into J2 on the IC-EX310 unit.
- 3) Plug the 8-pin plug from the IC-EX310 unit into J12 on the LOGIC UNIT. See photo below for the position of J12 on the LOGIC UNIT.

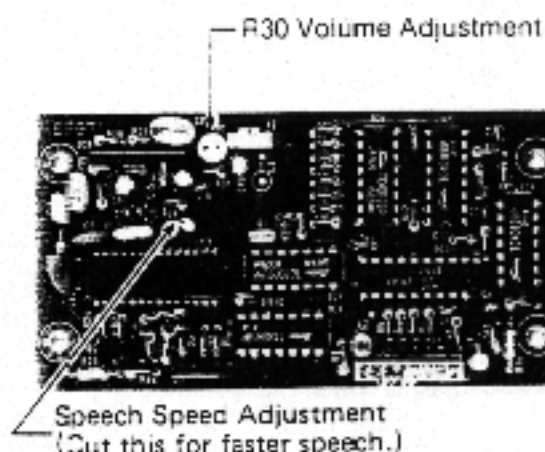


- 4) Adjust the volume and speech speed if necessary. The procedure is described below.
- 5) Replace the top and bottom covers on the IC-751A.

• ADJUSTMENT

- 1) Adjust the speech volume and speech speed, if necessary, before the top and bottom covers are replaced.
- 2) Connect a power source to the transceiver and push IN the [POWER] SWITCH. Push the [SPEECH] SWITCH on the front panel to have the displayed frequency announced in English.
- 3) The volume of the announcement is adjustable with R16 on the voice synthesizer unit. Adjust F30 to a comfortable audio level.

IC-EX310 VOICE SYNTHESIZER UNIT



- 4) The W1 jumper wire controls the speech speed. Cut W1 to increase the speech speed.
- 5) Replace the top and bottom covers of the transceiver when adjustments are completed.

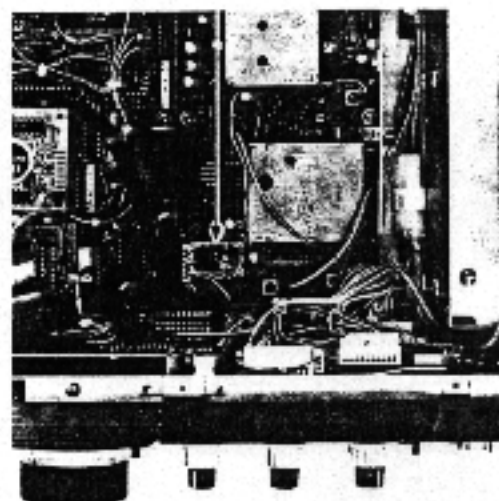
11 - 4 OPTIONAL CR-64 HIGH-STABILITY CRYSTAL UNIT

• INSTALLATION

- 1) Turn the transceiver upside down.
- 2) Unscrew the six screws on the PLL UNIT. Unplug all connectors then turn the unit over to view the printed circuit side shown on p.11-5.
- 3) Use a de-soldering braid to remove solder from the original crystal unit terminals and grounding lead. Remove the original crystal unit and grounding lead from the PLL UNIT.
- 4) The mounting location for the high-stability crystal unit is shown in the photo below. The holes for the unit terminals are predrilled. If the holes are filled with solder, remove the solder using a desoldering braid.

PLL UNIT

Space for CR-64 CRYSTAL unit

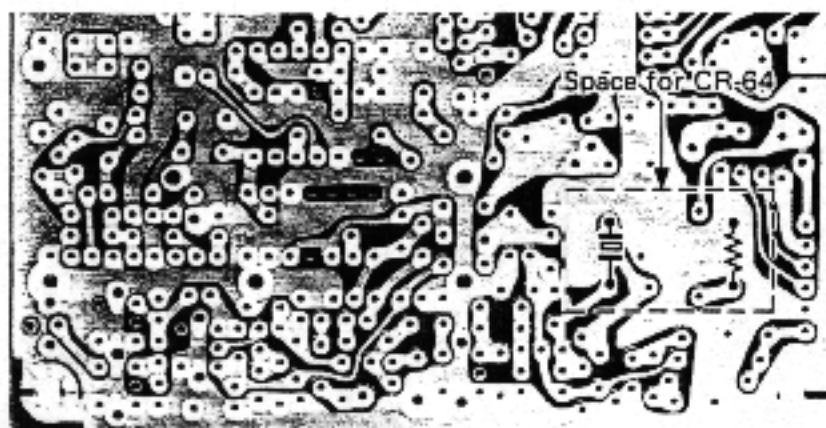


- 5) Orient the unit so that the crystal and heater terminals are inserted into the correct holes as indicated in the photo below. The terminals are labelled on the bottom of the unit.

Position the crystal unit flush with the PLL P.C. Board and bend the leads against the foil on the board and solder.

- 6) Trim the terminals even with the solder points.
- 7) Replace the PLL P.C. Board and re-install the connectors. Replace the top and bottom covers of the transceiver.

PLL P.C. BOARD



- 4) Program the UT-30 for the frequency required using the programming chart below. The UT-30 is factory programmed at 88.5Hz.

- 5) Replace the transceiver cover.

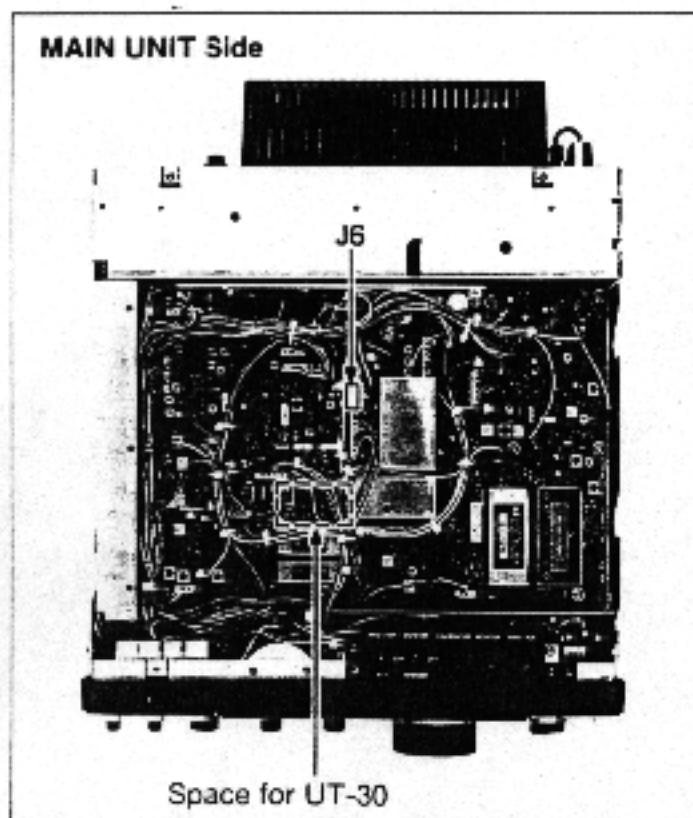
NOTE: Install and solder a jumper wire in each position indicated by "1" in the table below.

SUBAUDIBLE TONE ENCODER PROGRAMMING CHART

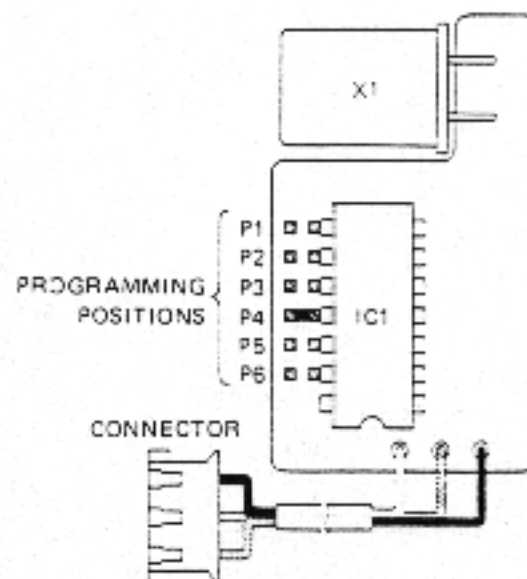
FREQUENCY	P1	P2	P3	P4	P5	P6	FREQUENCY	P1	P2	P3	P4	P5	P6
67.0	1						71.9			1			
71.9		1					74.4	1					
74.4	1						77.0			1			
77.0			1				79.7	1					
79.7	1			1			82.5		1				
82.5		1			1		85.4	1					
85.4	1						88.5						
88.5				1			91.5	1					
91.5	1						94.6		1				
94.6		1					97.4	1					
97.4	1						100.0						
100.0			1				103.5						
103.5				1			107.3						
107.3					1		110.9		1				
110.9		1					114.8						
114.8			1				118.8						
118.8				1			123.0						
123.0					1		127.3						
127.3						1							

11 - 5 OPTIONAL UT-30 PROGRAMMABLE ENCODER UNIT

• INSTALLATION



- 1) Remove the transceiver top cover.
- 2) Install the UT-30 where IC3 is located on the MAIN UNIT using the supplied doublesided tape.
- 3) Plug the 3-pin connector from the UT-30 into J6 on the MAIN UNIT.



• Above unit is programmed for an 88.5Hz tone at the factory.

• FILTER CHARACTERISTICS

MODE	FILTER	CHARACTERISTICS		
		Center Frequency	-6dB point	-60dB point
CW/RTTY	FL-52A	455kHz	500Hz	1kHz
CW/RTTY	FL-53A	455kHz	250Hz	480Hz
CW/RTTY	FL-63A	9.0106MHz	250Hz	800Hz
CW/RTTY	*FL-32A	9.0106MHz	500Hz	1.34kHz
SSB	FL-70	9.0115MHz	2.8kHz	5kHz
SSB	*FL-80	9.0115MHz	2.6kHz	3.8kHz
SSB	*FL-44A	455kHz	2.3kHz	4.2kHz
AM	FL-33	9.0100MHz	6kHz	20kHz

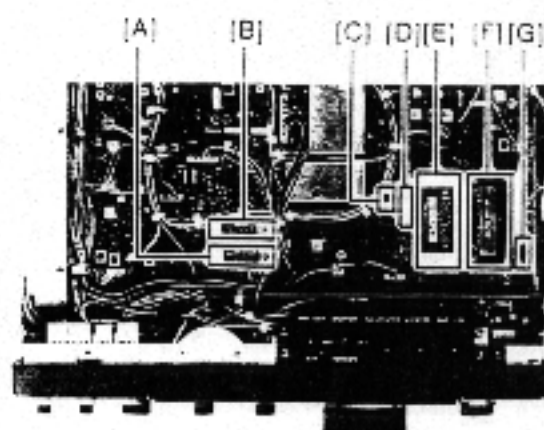
NOTE: The filters marked with "*" are supplied with the IC-751A.

• FILTER COMBINATIONS

MODE	FILTER SWITCH	9MHz FILTER	455kHz FILTER	STANDARD BANDWIDTH	P.B.T.
USB/LSB	OUT	FL-80	FL-44A	2.3kHz	YES
	IN	FL-80	CFJ455K5	2.5kHz	YES
CW/RTTY	OUT	FL-32A	FL-44A	500Hz	YES
	IN	FL-80	FL-44A	2.3kHz	YES
CW/RTTY NARROW	OUT	FL-32A	FL-52A/ FL-53A	500Hz/ 250Hz	YES
	IN	FL-80	FL-52A/ FL-53A	500Hz/ 250Hz	IF SHIFT
AM	OUT	THROUGH	CFW455HT	5kHz	NO
	IN	THROUGH	CFJ455K5	3kHz	NO
FM	OUT	THROUGH	CFW455E	15kHz	NO
	IN	THROUGH	CFW455E	15kHz	NO

• FILTER SYSTEM

Bracketed numbers indicate filters shown in diagram below.



See pages 11-1 ~4 for installation instructions.

FILTERS

