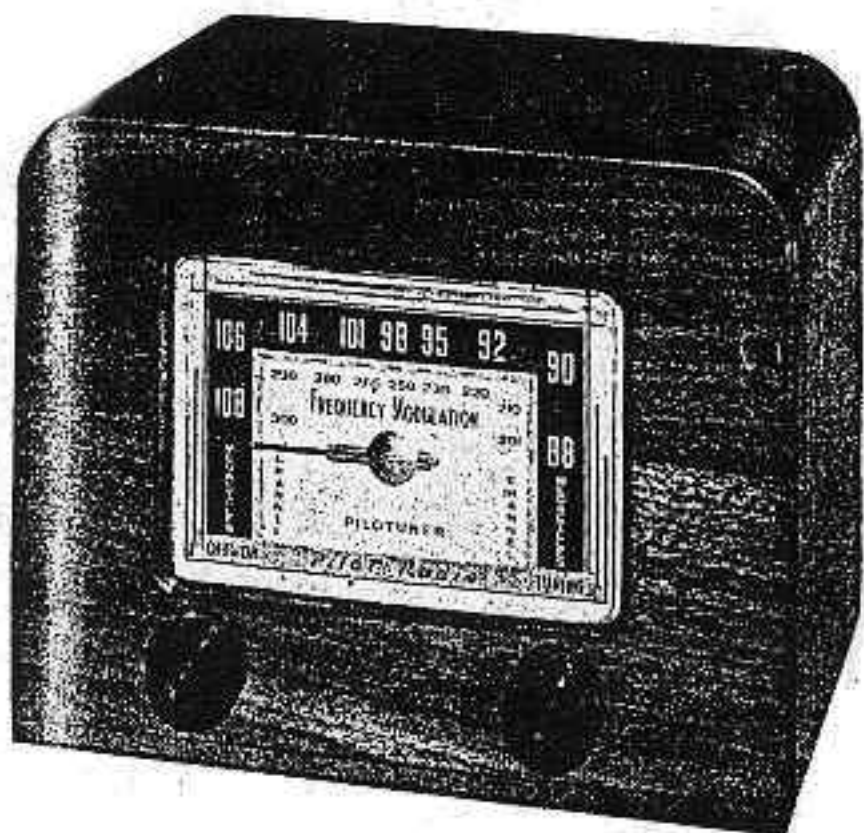


PILOTUNER

PILOT RADIO - MODEL T-601

AC Operation Only

Tuning Range 88-108 Mc.



- Pilot Radio's 39 years of engineering skill and renown as the "standard of excellence" bring you the finest in frequency modulation reception.
- The FM PILOTUNER is a complete, high quality frequency modulation unit that can be attached simply to your radio, large or small, old or new . . . to any separate phonograph, record player or amplifier system. The safety requirements of this set have been tested, and the model listed, with the Underwriters' Laboratories
- This booklet has been prepared especially for you. Read it carefully. The few minutes spent in reading it and in following the installation instructions will bring you an ample reward . . . the finest in FM reception.

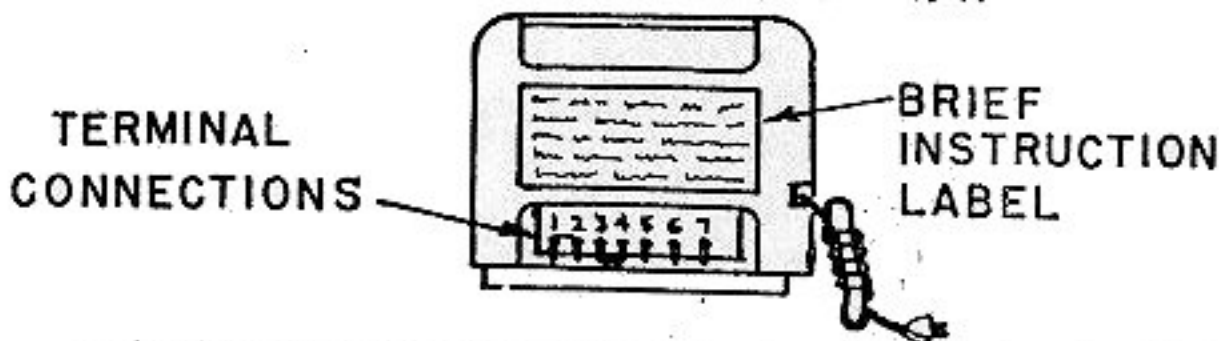


Pilot
RADIO CORPORATION

LONG ISLAND CITY 1, N.Y. U.S.A.

I. GENERAL

The FM PILOTUNER is a complete, superheterodyne frequency modulation unit, consisting of 5 miniature tubes and a selenium rectifier. It contains its own power supply, designed for AC operation only. However, it does not contain a loudspeaker and audio system. Therefore, the FM PILOTUNER must be connected and operated through your own radio receiver, or separate phonograph, record player or amplifier system. All installation connections from and to the FM PILOTUNER are made to the terminals on the back of the cabinet, numbered from 1 to 7.

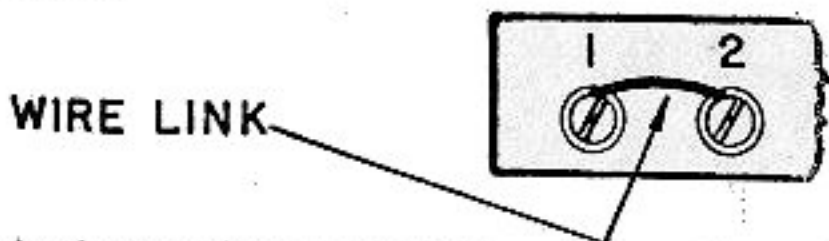


A brief resume of the installation instructions is printed on the label attached to the back of the cabinet. For complete explanation, follow the detailed instructions contained in this booklet.

II. ANTENNA CONNECTIONS

The choice of antenna to be used for the best FM reception depends on many factors: your location, the type of building, power and distance of the FM station. The three main types of antennas are explained below. Test your FM PILOTUNER and choose the one most practical for your use.

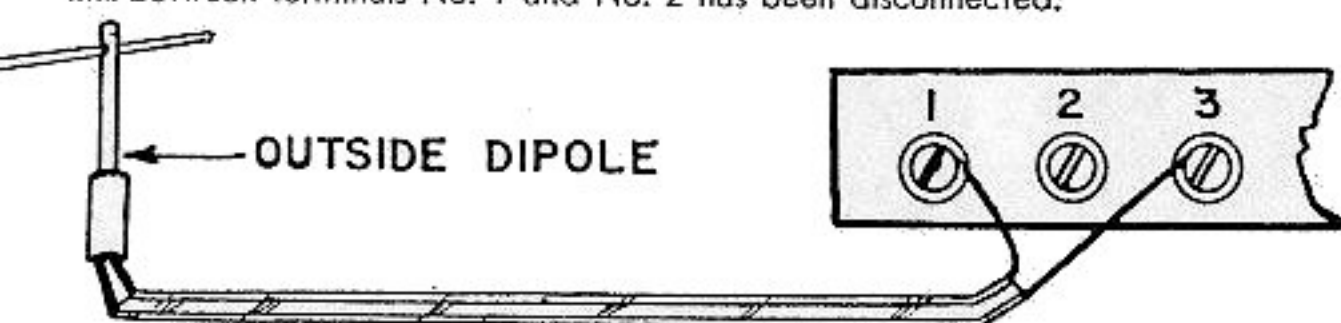
A. For local high-powered FM stations: The PILOTUNER, when shipped from the factory, is equipped with a permanent built-in antenna that will be satisfactory for good reception of most local FM stations. This built-in antenna is connected internally through a wire link between terminals No. 1 and No. 2. For best results when using the built-in antenna, keep the electric line cord extended to its full length and separated from the connector cable of the PILOTUNER.



B. For local weak-powered FM stations: Improved reception of weak FM stations may be obtained, in some localities, by disconnecting the wire link between terminals No. 1 and No. 2, and attaching a 4 ft. length of wire to terminal No. 1. Keep this wire stretched out at full length in order to secure the maximum signal pick-up.



C. For distant FM stations: In a few cases, an outside FM dipole antenna may be found to be necessary when the FM PILOTUNER is operated at a great distance from the broadcasting station, or under unusual operating conditions. The outside dipole antenna (equipped with a 300 ohm flat lead-in) should be connected to terminals No. 1 and No. 3, after the wire link between terminals No. 1 and No. 2 has been disconnected.



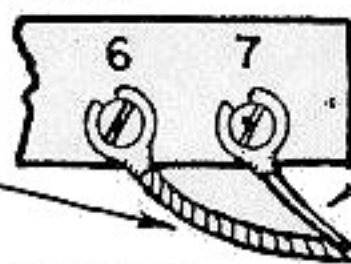
III. CONNECTIONS FROM PILOTUNER TO RADIO RECEIVER

A 5 ft. shielded cable is furnished with the FM PILOTUNER to facilitate connecting the tuner to your radio receiver, or separate phonograph, record player or amplifying system. One end of this cable is provided with spade lugs for easy connection to the terminals at the back of the PILOTUNER.



Attach the center wire of one end of the connector cable to terminal No. 7; attach the outside shielded wire of the same end of the connector cable to terminal No. 6.

**OUTSIDE SHIELDED
WIRE OF
CONNECTOR
CABLE**



**CENTER WIRE OF
CONNECTOR CABLE**

Now, the FM PILOTUNER is ready for attachment to your radio receiver. The method of connecting the PILOTUNER will depend on whether the radio receiver is a combination set with phonograph, a radio with phonograph outlet only, or a radio without phonograph or phonograph outlet.

A. **Combination Radio Receiver with Phonograph:** Locate the phonograph terminal at the back of your radio receiver chassis. Usually it will be marked PHONO or TELEVISION. There are, in general, three different types of phonograph terminals on standard receivers, as follows:

1. Screw-type Photo Terminal:

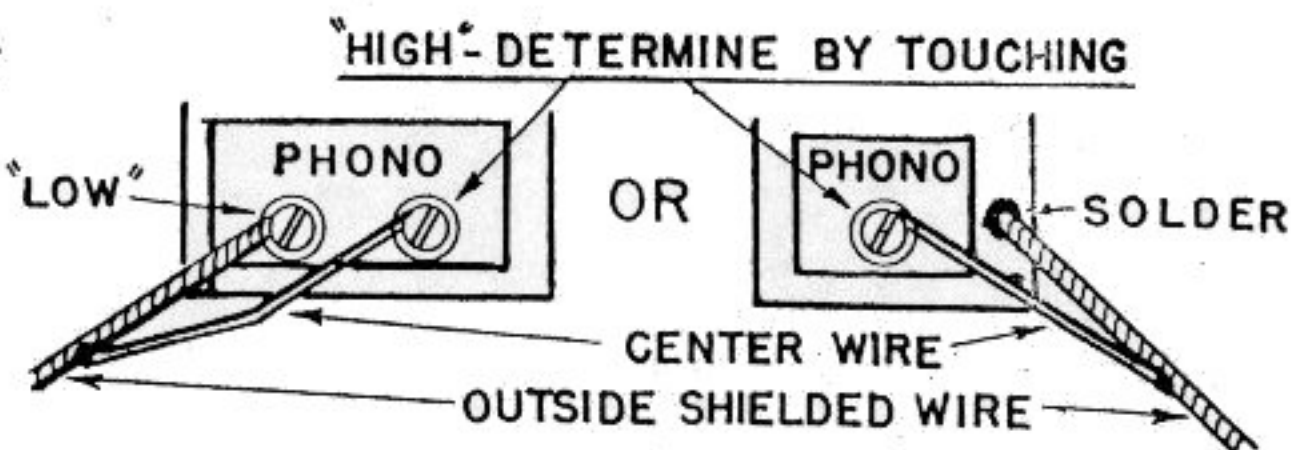
Disconnect any wires attached to this type of phono terminal, and mark them for future reference.



SCREW TYPE

Attach center wire of the free end of the PILOTUNER connector cable to the "high" side of the phono terminal. You can determine the "high" side by touching each of the screws of the phono terminal with the radio receiver

in operation, and the selector switch on PHONO position; the "high" side will cause speaker hum. Then, attach the outside shielded wire of the same end of the PILOTUNER cable to the "low" or grounded side of the phono terminal. If there is only one screw on the phono terminal of your radio receiver, it will be the "high" side.

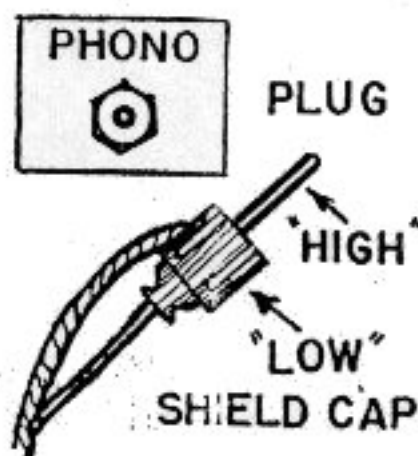


Therefore, connect the outside shielded wire of the PILOTUNER connector cable firmly, preferably by soldering, to the radio receiver chassis.

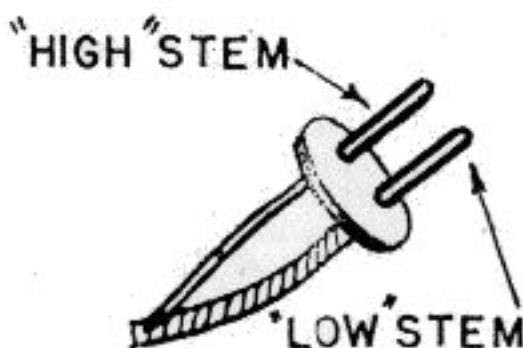
2. One-hole Plug Phono Terminal:

Remove plug from phono terminal. Disconnect wires attached to the plug, and mark for future reference.

Connect center wire of PILOTUNER connector cable firmly, preferably by soldering, into center stem of plug ("high" side), and then connect outside shielded wire of connector cable firmly to the outside shield cap of plug ("low" side). Replace plug into single-hole phono terminal.



3. Two-hole Plug Phono Terminal:



Remove plug from phono terminal. Disconnect wires attached to the plug, and mark for future reference. Connect center wire of PILOTUNER connector cable firmly, preferably by soldering, into one stem of the plug ("high" side), and outside shielded wire of connector cable into other stem of plug ("low" side). Replace two-hole plug into phono terminal.

B. Radio receiver with Phono Outlet only (no Phonograph):

Connection of the PILOTUNER will be made similar to the instructions outlined in paragraph III A above, except that no phonograph leads have to be disconnected.

C. Receiver without Phonograph or Phono Outlet

THIS INSTALLATION MUST BE MADE BY A COMPETENT RADIO SERVICE TECHNICIAN SINCE IT IS NECESSARY TO WIRE THE PILOTUNER DIRECTLY INTO THE CIRCUIT OF YOUR RADIO RECEIVER.

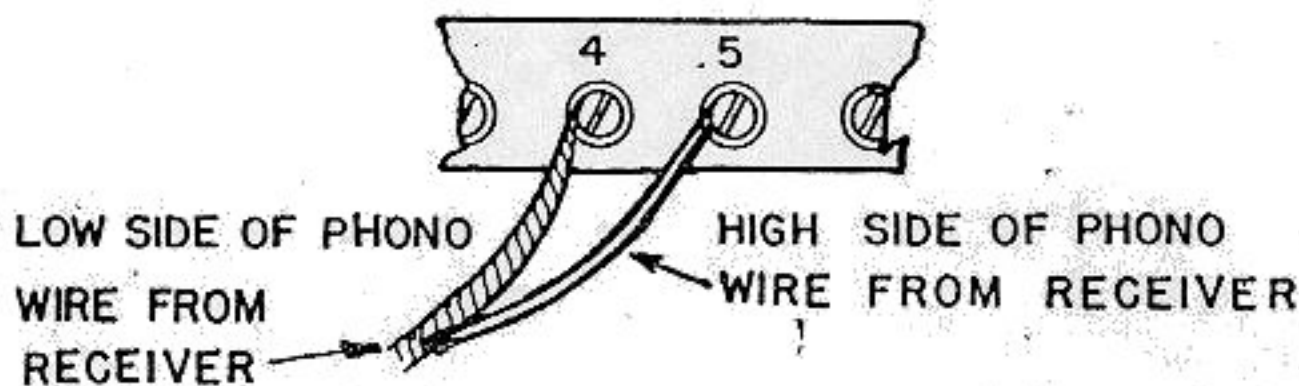
IV. CONNECTIONS FROM PILOTUNER TO SEPARATE PHONOGRAPH RECORD PLAYER OR AMPLIFIER SYSTEM

Connection of the PILOTUNER is possible in accordance with instructions outlined in paragraphs III A 1, 2 and 3 above, provided there is a phono terminal available. However, if there is no phono terminal, this type of installation must be made by a radio service technician, following the instructions given in paragraph III C, above.

V. CONNECTIONS FROM RADIO RECEIVER PHONOGRAPH TO PILOTUNER

If you disconnected any wires from the phonograph terminal of your radio receiver in order to connect the FM PILOTUNER (paragraph III A 1, 2 and 3, above), locate these wires which you marked for future reference.

Attach the "high" side of the phonograph wire from your radio receiver to terminal No. 5 of the PILOTUNER; and attach the "low" side of the phonograph wire from your radio receiver to terminal No. 4 of the PILOTUNER. The phonograph of your combination radio will operate normally when the ON - OFF switch of the PILOTUNER is in the OFF position.



VI. OPERATION OF THE FM TUNER

After the necessary installation has been made according to the instructions contained in the preceding paragraphs, the electric line cord of the PILOTUNER may be plugged into an AC wall socket. Turn the ON-OFF switches of both the FM PILOTUNER and your radio receiver to the ON position. NOTE: The selector switch of your own radio receiver must be on PHONO position, if your radio is a combination set with phonograph, or a radio with phono outlet. If your radio receiver does not have a phonograph or a phono outlet, merely turn the ON - OFF switch to the ON position. The volume for FM reception is regulated by the volume control of your own radio receiver. The FM band is ultra high frequency. This necessitates precision tuning. Therefore, it is necessary to move the tuning knob of the FM PILOTUNER very slowly when tuning in stations. Rotate the knob back and forth several times over the station desired. You will know that the station is "on-the-button" when all side-band noise disappears.

If the power supply hum is excessive, reverse the electric line cord plug of your radio receiver or of the FM PILOTUNER, or both in the wall socket. Also check to determine whether the wires of the PILOTUNER connector cable have been attached to the proper terminals.

The FM PILOTUNER is designed for AC operation only, and will give best results when connected to an AC radio receiver. However, if the PILOTUNER is connected to an AC-DC radio receiver operated on AC a very slight hum may occur when the volume control is on full for reception on weak-powered stations. In this case, we suggest the use of an improved antenna system as described in paragraphs II B and C.

VII. SERVICING OF THE FM PILOTUNER (For use of Radio Technician)

Should the FM PILOTUNER become inoperative for any reason, we suggest you contact your local Pilot Radio dealer for servicing. The chart and schematic on the following pages are for the use of your radio serviceman.

Alignment of the PILOTUNER should be done by a competent radio service technician, provided the proper output meter and signal generator are available. Insulated alignment tools are necessary. The output meter should be a D.C. vacuum tube voltmeter with a range of at least 20 volts. The signal generator should cover the frequencies of 10.7, 90 and 106 mc. Allow the PILOTUNER to warm up for at least 30 minutes before making any adjustments. The location of the adjustment screws is indicated clearly on the schematic diagram. Follow the sequence in the alignment chart.

ALIGNMENT CHART

(Follow sequence as indicated)

CIRCUIT ALIGNED	STEP	RCVR. DIAL POINTER	SIGNAL GEN.		METER	METER CONNECTIONS	TRIMMER OR SLUG ADJUSTMENT	PROCEDURE
			FREQ.	CONNECTIONS				
IF	1	88 mc	10.7 mc	Through .01 mfd. cap. to grid of 6BE6	VTVM	Across two 100K resistors —indicated by dotted lines in schematic	S2, S1, S4, S3, S6, S5	Adjust for maximum output
	2		Repeat Step No. 1					
Ratio Detector	3	88 mc	10.7 mc	Same as No. 1	VTVM	From: Junction of two 100K resistors TO: Audio output of ratio detector. Connections indicated by dotted lines in schematic	S1	Adjust meter to zero (Check proper zero set) Meter should register reverse polarity when slug is rotated through zero output.
Oscillator	4	90 mc	90 mc	Through carbon 300 ohm resistor to Ant. Terminal	VTVM	Same as Step No. 1	P8	Same as Step No. 1
	5	106 mc	106 mc	Same as No. 4	VTVM	Same as No. 1	T7	Same as No. 1
	6		Repeat Steps No. 4 & 5					
	7	90 mc	90 mc	Same as No. 4	VTVM	Same as No. 1	P10	Same as No. 1
RF	8	106 mc	106 mc	Same as No. 4	VTVM	Same as No. 1	T9	Same as No. 1

