

HERMON HOSMER SCOTT, INC.
385 Putnam Avenue
Cambridge 39, Mass.

INSTRUCTIONS FOR THE OPERATION
of the
Type 330 AM-FM Tuner

DESCRIPTION

This AM-FM Tuner may be used for either monaural or binaural (stereophonic) operation. Both the AM and FM sections incorporate circuit advances which result in performance superior to that ever possible before.

Outstanding features include:

AM Section:

- * New detector design which results in distortionless reception on even the highest modulation percentages and frequencies.
- * New wide-range AM setting for perfect reception of high-fidelity AM Broadcasts.

FM Section:

- * Three microvolt sensitivity for 20 db of quieting. Even the most distant stations are received with clarity.
- * Wide-band design consisting of 2 megacycle detector bandwidths and 150 kc IF bandwidth. This circuit design simplifies tuning, making it absolutely drift-free and non-critical.

UNPACKING

Remove the tuner from the shipping carton and inspect immediately for any damage. Damage must be reported to the dealer from whom you purchased the tuner. If your dealer shipped the tuner to you, the damage should be reported to the shipping company.

Check the carton for the following:

- 1 - Mounting template
- 1 - Package of four panel mounting screws
- 1 - Package of four mounting feet
- 1 - Length of wire for simple FM antenna
- 1 - Warranty card

INSTALLATION

Caution - The life of electronic equipment is materially shortened if proper ventilation is not provided. If the 330 is installed in a custom cabinet,

leave the back open, or one side open, or provide several ventilating holes. If the 330 is installed in its own accessory case, keep the back at least two inches away from any vertical surface.

Installing in a Custom Cabinet or Panel Mounting:

If the amplifier is to be panel mounted or installed in custom cabinetry, be sure to leave one side or the back of the cabinet open for adequate ventilation. Detailed instructions on panel mounting are given below.

1. Locate a supporting shelf in a cabinet at the height at which you wish the tuner positioned.
2. With the panel in position, mark the edge at which it meets the upper shelf surface.
3. Using this line as a guide, place the mounting template in position.
4. Mark the size of the cutout and carefully cut the opening as indicated on the template. Pre-drill the four holes for the panel mounting screws with a 5/64" drill.
5. Slide the amplifier in from the front so it rests on the shelf. The front panel should completely cover the opening.
6. Fasten the 330 to the panel, using the four wood screws provided.

Vertical Mounting. Same instructions given above should be followed when making the panel cutout. The back of the tuner must rest on a supporting shelf or block at the bottom of the cabinet. The tuner must be supported and must not hang from the front panel.

Using the Tuner on a Shelf or Table. A beautiful plastic covered leather finish case is available from your dealer. This case removes need for panel or cabinet mounting and the tuner can be used with your H. H. Scott amplifier to make a very attractive installation. Complete installation instructions are provided with each case.

ELECTRICAL CONNECTIONS

AM Antenna - The 330 contains two antenna switches which permit a variety of antenna connections to suit individual needs. Switch number one, located below the AM tuning shaft, selects either the built-in "ferri loopstick" or an external antenna which may be either a separate AM type or the FM antenna lead-in, depending upon the position of switch two, located at the rear of the chassis near the antenna terminal board. Table I below illustrates settings for various types of reception.

Table I

<u>Use</u>	<u>Switch 1</u>	<u>Switch 2</u>	<u>External Antenna(e)</u>	<u>Connected to</u>
Local AM, FM	Loop	Either Position	Short Wire	"FM ANT"
Medium AM, FM	External	FM	FM Dipole	"FM ANT" and "G"
Distance AM, FM	External	AM	FM Dipole	"FM ANT" and "G"
			AM Outside Antenna*	"AM ANT"

*If two wire AM Antenna is used, connect second wire to "G".

FM Antenna - If you are within a few miles of the FM stations you wish to receive, a short length of wire attached to the terminal "FM ANTENNA" at the back of the chassis will be sufficient.

When receiving signals that are weak (as indicated by a low reading on the meter) slight movement of the antenna wire may help considerably in improving reception. Move the wire around until the meter shows the maximum reading. This will be the best antenna position for the particular station you are tuned to.

When the tuner is used at greater distances from stations you wish to receive, a more elaborate antenna array should be used for best results. A simple antenna that will work well in weak signal areas is the folded dipole. Construction of a simple folded dipole antenna is shown in the drawing. It is made from ordinary TV antenna lead-in wire.

The folded dipole is directional, and on very weak signals a small movement in its position may result in a substantial improvement in reception. The antenna should be moved to the point where the meter reads its maximum value on the station you have difficulty receiving. The best antenna position is usually broadside to the direction of the station.

Your TV antenna may also be used, but it may not give as satisfactory reception as a separate FM antenna. A switch must be provided so that you can switch between the FM tuner and TV set, depending on which set is in operation. Two sets should never be connected to one antenna at the same time.

Several high quality 300 ohm antenna arrays are also available for roof or tower installation. These arrays will give the best performance from your FM tuner. These antennas have different characteristics, which range from those working best in a single direction only, to those that will receive well from any direction. The location of the stations you have difficulty receiving will determine which array will work best for you. It is important to remember that with the very directional antennas a slight movement of the antenna may result in a substantial increase in signal strength, as shown on the meter.

Audio Connections:

Monaural Operation - Using shielded cable, connections should be made between the jack labeled "OUTPUT" at the back of the tuner and the "TUNER"

(or other high-level) input of your amplifier. The proper connecting cable can be obtained from your dealer or from any radio parts supply house.

The audio section of the 330 has a very low impedance output, so shielded connecting cables of 70' (or 1,000 mmf cable capacitance) in length between the tuner and your amplifier may be used. If there is insufficient output from this jack to drive your amplifier, use the "TAPE OUTPUT" jack. This output has a voltage of about 5 volts, while the regular "OUTPUT" jack has an output of about 1 volt.

Binaural Operation - Two binaural output jacks, located at the back of the 330, are used for binaural operation. The jack labeled "FM" provides an FM audio signal no matter where the selector switch on the front panel is set. The output of the jack labeled "AM" is determined by the AM setting of the front panel selector switch. For example, a wide-range AM signal can be obtained at the AM binaural output when the front panel selector switch is set to "AM WIDE RANGE."

For binaural operation, connect one power amplifier and speaker system to the FM output and another amplifier and speaker system to the AM output. The AM and FM tuning dials should then be set to the proper frequencies of the station which is transmitting the binaural broadcast. The selector switch should be set to the type of AM reception which is best for local conditions.

Connection to a Tape Recorder. The jack marked "TAPE OUTPUT" is for connecting the tape recorder input for "off-the-air" recording. Most tape recorders have a sufficiently high input impedance so that both the tape recorder and amplifier may be left connected at the same time. This enables you to monitor the broadcast through your sound system as the recording is being made. If signal level overloads tape recorder, use "OUTPUT" jack on tuner.

Power Connections. The 330 is designed to operate on 105-125 volts, 50-60 cycles. The unit is turned on or off with a power switch on the front panel. There is an auxiliary AC power outlet at the rear of the tuner which is switched on and off with the front panel power switch. This is for connecting an accessory such as turntable or tape recorder.

OPERATING THE TUNER

Selector Switch. This switch should be set to the type of reception you require. Three AM positions are available to meet varying AM reception conditions. These are:

AM Wide-Range: For reception of high-quality AM broadcasts, especially in areas where there are no serious electrical disturbance.

AM Normal: This position is suited for reception of average AM broadcasts, especially if there may be some electrical disturbances present.

AM Distant: This position is useful for AM reception in the evening when it is desired to separate stations that are close to each other or when interference is particularly severe. It can also be used for daytime reception when there is strong local interference present.

Tuning and Station Selection. There are separate tuning dials for FM and AM. The larger of the two tuning knobs (the outer ones) is used for quick station setting or for tuning rapidly from one end of the band to the other. The smaller knob provides vernier adjustment, giving very precise control. This is helpful on very weak stations.

Logging. A logging scale is provided on both the AM and FM tuning dials. It is marked in linear divisions, so that stations which are often tuned to can be easily remembered. The logging scale also provides a fine calibration which is useful for recording the position of stations located in between the main points on the frequency dial.

Meter. The meter selector switch determines whether the meter is operating on AM or FM. On very weak stations, the meter is helpful in getting optimum station settings. The vernier tuning control should be adjusted until the indicator either reads the maximum or until the signal sounds clearest. These two points will be very close to each other.

On FM the meter is also particularly helpful for proper antenna orientation. Move the antenna until the meter reads a maximum. This position of the antenna means it is properly oriented to the particular station to which you are tuned.

The meter was designed for sensitive action, and it will not be damaged if it moves rapidly or deflects off scale.

Level Controls. There are two controls labeled FM LEVEL and AM LEVEL on the back of the 330 chassis. These controls enable you to switch between the tuner and other inputs to your amplifier without having to readjust the volume. The level control should be set to that point which gives the same audible volume from the speaker as is obtained when you set your amplifier selector switch to PHONO, or to other inputs for which the volume has been previously set.

Automatic gain control of the FM station and automatic volume control of the AM section make frequent manual readjustment of volume unnecessary.

SERVICE

Replacing Pilot Light. First set the tuning dial so that the heavy white lines line up the red pointers and the logging scale is toward the top of the panel. In this position the tuning dial is completely closed. Unscrew and remove the small tuning knob. The large tuning knob may then be easily removed. This will give you access to the pilot light which is a #44 bulb. After the bulb has been replaced make sure the condenser plates are closed. Replace the large knob, again lining up the heavy white lines and the red markers, in the logging scale towards the top of the front panel. Replace the small knob.

Other Service: Service, other than either pilot light or occasional tube replacement usually is never required. If your tuner is not operating properly

be sure to check first all external connections and all amplifier connections to make sure that the difficulty is actually in the tuner. Then, tubes should be checked, preferably by replacing with new ones, one by one. Tube defects often times do not show up on a tube tester.

If the tuner still fails to operate, or does not seem to be working properly, write to Service Department, H. H. Scott, Inc., 385 Putnam Avenue, Cambridge, Massachusetts, giving all details. We will notify you whether you can make the necessary repairs, or whether it would be preferable to return the tuner to us or an authorized service station for servicing.

No attempt should be made to align the tuner unless you have had extensive experience in tuner alignment, and have all the necessary laboratory equipment. Without proper experience, you may seriously damage the tuner and void the warranty.

WARRANTY

Be sure to fill out and return the enclosed warranty card so that your instrument will be registered with us. Complete details on the terms of Warranty are on the enclosed warranty statement.