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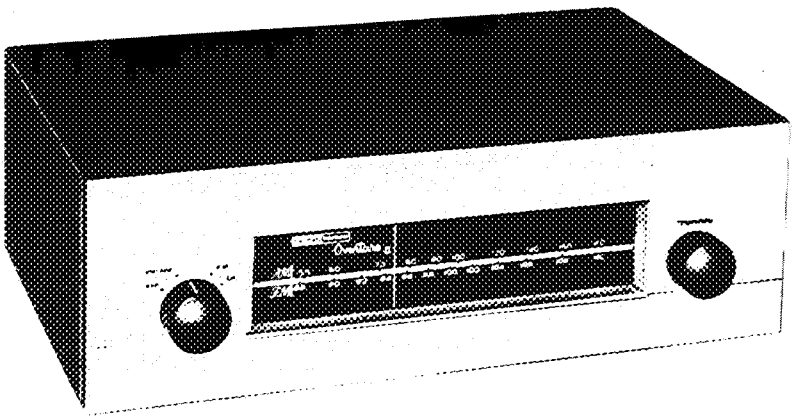

The Overture II

MODEL T-12

HIGH FIDELITY AM-FM TUNER

OPERATION AND SERVICE INSTRUCTIONS

IMPORTANT

It is essential you read this instruction book carefully before setting up your Harman-Kardon system. You have invested in a fine instrument into which many excellent engineering developments have been incorporated. Each is important for the proper operation of your system. This book has been written in simple nontechnical language and if you will take the time to read it first before doing anything else you will find it simple to obtain optimum performance from your Overture II.

UNPACKING

After unpacking the Overture II, inspect it carefully for signs of damage in transit. Your unit was subjected to many inspections and tests prior to packing. If damage is visible, notify your dealer immediately. If the unit was shipped to you, notify the transportation company at once.

Check the contents of the carton carefully. Be sure to inspect the folds of the packing material before discarding it. Your package should contain:

1 Overture II, Model T-12.
1 Instruction Booklet.
1 Antenna Wire. (FM)
1 Warranty Card.
1 Template and Cabinet Installation Instructions.
1 Package Mounting Hardware.

It is strongly urged that the warranty card be completed and mailed without delay, to protect your rights under warranty. If you should require repair service or information on the use of your high fidelity instrument, we will be able to identify your unit immediately, and respond quickly. NOTE: To expedite service, when necessary, please contact Harman-Kardon first. We will suggest a warranty station in your area and give you the proper procedure and authorization for shipping.

INSTALLATION

Your Overture II tuner may be installed on an open shelf, table, bookcase or high fidelity equipment cabinet. For cabinet mounting, refer to the template supplied with this instruction book.

Ventilation:

All electrical equipment generates heat which must be allowed to escape. Although the Overture II is well ventilated in itself, sufficient space should be allowed around it to permit free air flow. If it is placed in a bookcase, it should be located well toward the front, to provide as much clearance as possible at the rear. DO NOT place books or other objects on top of the Overture II. Covering the perforated metal cage will prevent proper air flow and will result in sharply reduced component and tube life.

POWER REQUIREMENTS:

Plug the AC power cord into any outlet furnishing 117 volts, 50 or 60 cycles house current. The exact voltage is relatively unimportant and may vary between 105 and 125 volts. Be sure, however, that you have a 50 or 60 cycle AC power source. If preferred, the AC line cord may be connected to the convenience outlet of your amplifier.

ELECTRICAL CONNECTIONS

AM Antenna:

The Harman-Kardon ferrite loopstick built into the Overture II comprises all the antenna required for the finest in noise-free local AM reception.

In locations more removed from metropolitan areas, an outdoor antenna may be required. This should consist of a single wire, as long as is reasonably practical. It should be kept away from large metal objects, power lines or electrical machinery.

Connect one end of the outdoor antenna to the terminal marked "AM" on the Antenna Terminal Strip located at the rear of the chassis.

FM Antenna:

Due to the extremely high FM sensitivity of the Overture II, the 48" piece of wire furnished with the set will be sufficient antenna for all but the most difficult locations. One end of this wire should be fastened to the "FM" terminal of the Antenna Terminal Strip, the other end left free and extended as may be convenient. It may be tacked or stapled to the rear of the bookcase or equipment cabinet if necessary.

If, for some reason, it is necessary to utilize other FM antenna types, we have listed for your convenience the following suggestions:

1. Special outdoor FM antennas may be used. These come in various types. For extremely difficult locations an in-line Yagi cut for the FM band or equivalent may be necessary. For reception of FM stations scattered in many directions, the non-directional antenna may be used. This non-directional type is known as a double dipole and consists of two folded dipoles placed at right angles to each other.

2. Your present TV antenna may be used to obtain a maximum FM signal. A special antenna coupler or knife switch should be used when joining the FM line to the television antenna.

AUDIO OUTPUT:

Two jacks marked Audio Output will be found at the rear of the chassis. The two receptacles are connected in parallel. One of the Audio Output jacks should be connected to the amplifier tuner input receptacle with no more than a 3 foot length of shielded cable. The other jack may be connected to the input of a tape recorder.

OPERATION

In general, every control on a well designed, honestly considered high fidelity instrument has a specific useful function, related to each of the other controls. Although this cannot be a treatise on the subject, an explanatory note on the relationship of the various front panel controls will doubtless prove useful in organizing and clarifying them for the user.

Your Overture II incorporates the following operating controls located on the front panel. The Function Selector Switch (at the left) serves to turn the power off in its extreme counterclockwise position. In any other position, the power is turned on. This switch consecutively selects FM with AFC, FM without AFC and AM. The Tuning Knob (at the right) is used to tune for the desired station.

Automatic Frequency Control: (AFC)

FM broadcasting, by its very nature, eliminates almost all natural and man-made static. However, the characteristics of FM which makes this possible also causes problems in tuning. The Overture II incorporates a special electronic circuit known as Automatic Frequency Control that overcomes these problems and insures proper tuning even if the manual tuning is not accurately done. Therefore AFC always keeps the station in the center of the channel and eliminates distortion caused by inaccurate tuning.

Tune across the FM scale with the Function Switch in the FM-AFC position. Note how the stations "pop" into place. Now tune to any station, preferably one with a musical program. Defeat the AFC by turning the Function Switch to the FM position, and tune slowly through the station from left to right. Notice that there are three points where the station sounds clean, interspersed with points of distorted sound. The middle clean-sounding point is the proper tuning position for the best tone quality with minimum noise and interference. Detune the station so that the sound is distorted. Turn the Function Switch to FM-AFC, and notice how the sound clears up.

Actually, the tuning has been readjusted by the operation of the AFC circuit, which automatically retunes the electronic circuits to the center of the station channel.

In order to take maximum advantage of the benefits of AFC, it is suggested that fine tuning be done with the function switch in the FM position. When the switch is then turned to the FM-AFC position the AFC will improve this careful tuning by a factor of 10 to 1. This

procedure is especially recommended in those cases where a weak station is found close to a stronger one. Under these conditions, the AFC may tend to reach for the strong station, and completely skip over the weak station. If the weak station is tuned with the AFC defeated, the AFC will lock it in, after it has been reinserted.

NOTE: Volume and tone adjustment of the program source must be made at the amplifier.

MAINTENANCE AND REPAIR

In some installations, hum may be encountered due to a voltage difference between the amplifier, tuner and record changer chassis. This may be eliminated by reversing one or all of the AC power plugs. Simply reverse one at a time until improvement is experienced.

Due to the conservative design and high quality components of the Overture II, no routine maintenance other than yearly tube-testing is required. Should trouble develop, however, only the most qualified serviceman should be employed, as special equipment and training is required to properly service high fidelity equipment.

When changing tubes or performing repairs it is necessary to remove the cage and the safety interlock power cord. Do not use a "cheater" cord when the cage is removed as dangerous voltages will then be exposed.

This instruction booklet contains diagrams and other information needed by your repairman. It should be kept available for his use.

WARRANTY

We warrant each Overture II, Model T-12 to be free from defects in material and workmanship under normal use and service, and in accordance with the conditions herein below set forth, for a period of 1 year from date of delivery to the original purchaser, and agree to replace or repair any part or parts, with the exception of tubes which are under the manufacturer's 90 day warranty, returned to us within said 1 year, with transportation prepaid, and which our examination shall disclose to our satisfaction to have been thus defective. This warranty does not include free labor, nor is it applicable to any instrument which shall have been repaired or altered in any way so as in our judgment to affect its stability or reliability nor which has been subject to neglect, misuse, abuse, negligence or accident nor which has had the serial number altered, effaced, or removed. Neither shall this warranty apply to any instrument which has been connected otherwise than in accordance with the instruction furnished by us.

This warranty is expressly in lieu of all other warranties, express or implied, and of all other obligations or liabilities on our part, and we neither assume nor authorize any representative or other person to assume for us any other liability in connection with the sale of the Model T-12, Overture II.

SERVICE NOTES

Servicing printed circuits is a simple matter and is no more complicated than servicing conventionally wired circuits.

Printed circuit receivers, can be more easily repaired, if certain precautions are observed. Standard components are used throughout and can be removed and replaced by any serviceman. No special tools or skills are necessary. However, some parts which have special mounting and connection lugs should be replaced with exact duplicate parts.

Avoid Damage to Copper Foil

Be careful when removing components from the board. However, if the copper foil wiring is damaged a piece of wire can be used to replace the damaged foil. Small breaks can be "jumped" with molten solder. Larger breaks can be repaired with ordinary hook up wire. It is unnecessary to replace the entire board because of foil breakage.

Avoid Damage to Printed Circuit Board

Do not apply excessive pressure to the printed circuit board or components. This is especially important to note when changing tubes. Although the board is sturdy in construction and mounting, it may crack or break if proper care is not taken when servicing. In case the board is to be removed from the chassis, remove the mounting screws around the edges and unsolder the few leads that connect between the board and the chassis. If this is done, a vise with protected jaws should be used to hold the board while servicing and care should be taken not to exert excessive pressure against the board.

Avoid Excessive Deposits of Solder

In some areas on the printed circuit board, the wiring is very closely spaced. When resoldering a new component avoid excessive deposits of solder. Excessive solder may cause a short or an intermittent trouble to occur later which may be difficult to locate.

Avoid Overheating

When using the soldering iron (35 watts or less), do not overheat the component terminals or the copper foil. Excessive heat (applying soldering iron longer than necessary, using a higher wattage soldering iron than recommended, or using a solder gun) may cause the bond between the board and foil to break. This will necessitate replacement or repair of the foil connection.

Tools and Materials Required

(1) Low wattage soldering iron with a small point or wedge (rating should not exceed 35 watts).
(2) Small wire brush.
(3) 60% tin, 40% lead, low temperature rosin core solder.
(4) Thin bladed knife.
(5) Small wire pick, or soldering aid.

REPLACING COMPONENTS

Soldering Replacement Component to Old Leads

Cut the leads where they enter the defective component. Clean off the ends of the leads, leaving as much of the leads as possible. Make a small loop in each lead of the replacement component and slide the loops over the remaining leads of the old component. Caution should be taken not to overheat the connection since the copper foil may peel or the original component lead may

out of the board. This is possible due to heat transfer through the leads. The lead length of the replacement part should be kept reasonably short to provide some mechanical rigidity.

Unsoldering and Resoldering Components

To test a component or if the component is mounted in such a manner that the above method can not be used (such as vertically mounted capacitors, etc.) the component can be replaced by unsoldering it. This procedure should be used whenever it is necessary to unsolder any connections to replace defective components.

(a) Heat the connection on the wiring side of the board with a small soldering iron. When the solder melts, brush away the solder. Do not overheat the connection. In the process of removing the solder, caution must be taken to prevent excessive heating. Therefore, do not leave the iron on the connection while brushing away the solder. Melt the solder, remove the iron and quickly brush away the solder. It may require more than one heating and brushing process to completely remove the solder.

(b) Insert a knife blade between the wiring foil and the "bent-over" component lead and bend the lead perpendicular to the board. (It may be necessary to apply the soldering iron to the connection while performing this step as it is sometimes difficult to completely break the connection by brushing.) Do not overheat the connection.

(c) While applying the soldering iron to the connections, "wiggle" the component until it is removed.

(d) Remove any small particles of solder using a clean cloth dipped in solvent.

(e) A thin film of solder may remain over the hole through the board after removing the component. Pierce the film with the lead from the new component after heating the solder film with the soldering iron.

(f) Insert the leads of the new component through the holes provided. Cut to desired length and bend over the ends against the copper foil. Resolder the connection with 60/40 low temperature solder.

FUNCTION SWITCH SETTING	SIGNAL GENERATOR FREQ.	SIGNAL GENERATOR MOD.	SIGNAL INPUT POINT	OUTPUT INDICATOR	CONNECT INDICATOR TO:	DIAL SETTING	ADJUST	OUTPUT INDICATION
AM	455 KC	30% AM	AM RF GANG	AC-VTVM OR SCOPE	TUNER OUTPUT	1600 KC	2 AM IF TRANS.	MAXIMUM OUTPUT
AM	1500 KC	30% AM	AM ANT. TERM.	AC-VTVM OR SCOPE	TUNER OUTPUT	1500 KC	OSC & ANT TRIMMERS	MAXIMUM OUTPUT
AM	600 KC	30% AM	AM ANT. TERM.	AC-VTVM OR SCOPE	TUNER OUTPUT	600 KC	OSC COIL & LOOPSTICK	MAXIMUM OUTPUT
AM	1500 KC	REPEAT STEP 2						

AM ALIGNMENT PROCEDURE

FUNCTION SWITCH SETTING	SIGNAL GENERATOR FREQ.	SIGNAL GENERATOR MOD.	SIGNAL INPUT POINT	OUTPUT INDICATOR	CONNECT INDICATOR TO:	DIAL SETTING	ADJUST	OUTPUT INDICATION
FM	10.7 MC	300KC FM 60 CPS	FM MIXER GANG	AC-VTVM OR SCOPE	TEST POINT	———	3 FM IF TRANS.	MAX GAIN & SYMMETRY
FM	10.7 MC	300KC FM 60 CPS	FM MIXER GANG	AC-VTVM OR SCOPE	TUNER OUTPUT	———	DISCR. TRANS.	S PATTERN OF MAX GAIN & SYMM.
FM	106 MC	300KC FM 60 CPS	FM ANT. TERMINAL	AC-VTVM OR SCOPE	TEST POINT	106 MC	106 MC OSC RF, MIXER TRIMMERS	MAXIMUM OUTPUT
FM	90 MC	300KC FM 60 CPS	FM ANT. TERMINAL	AC-VTVM OR SCOPE	TEST POINT	90 MC	OSC, RF, MIXER COILS	MAXIMUM OUTPUT

FM ALIGNMENT PROCEDURE

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Harman-Kardon high fidelity instruments incorporate advanced production techniques as well as advanced circuit features. They reflect the highest state of the art of fine audio equipment. We hope your unit provides you with many hours of listening enjoyment.

Our Customer Service Department is maintained to answer your correspondence about High Fidelity and to make recommendation of appropriate companion accessories. Please feel free to write without obligation.