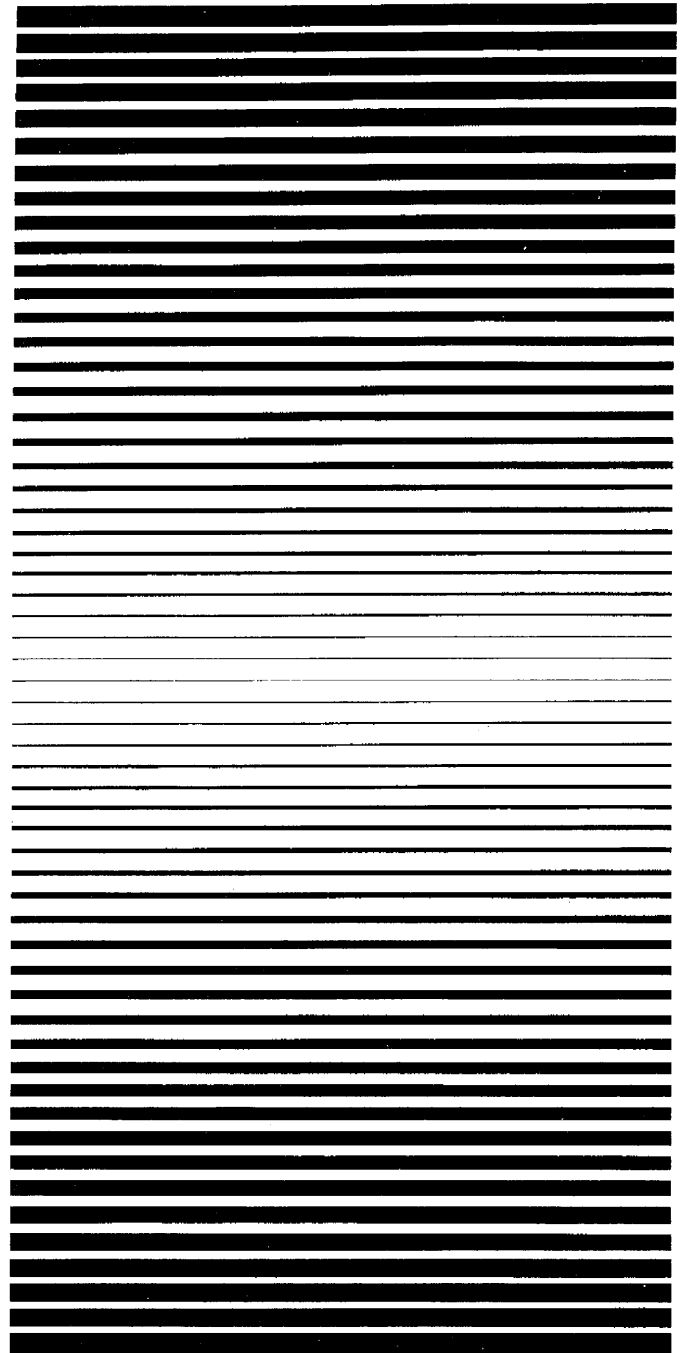
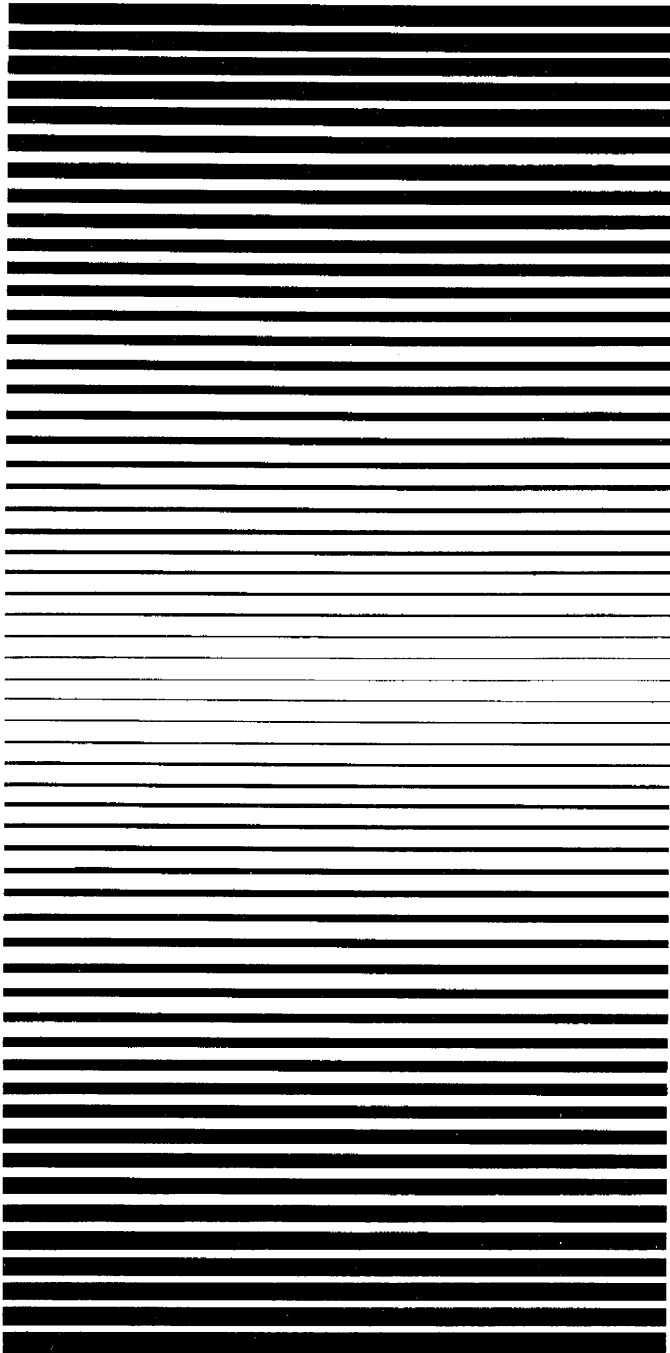


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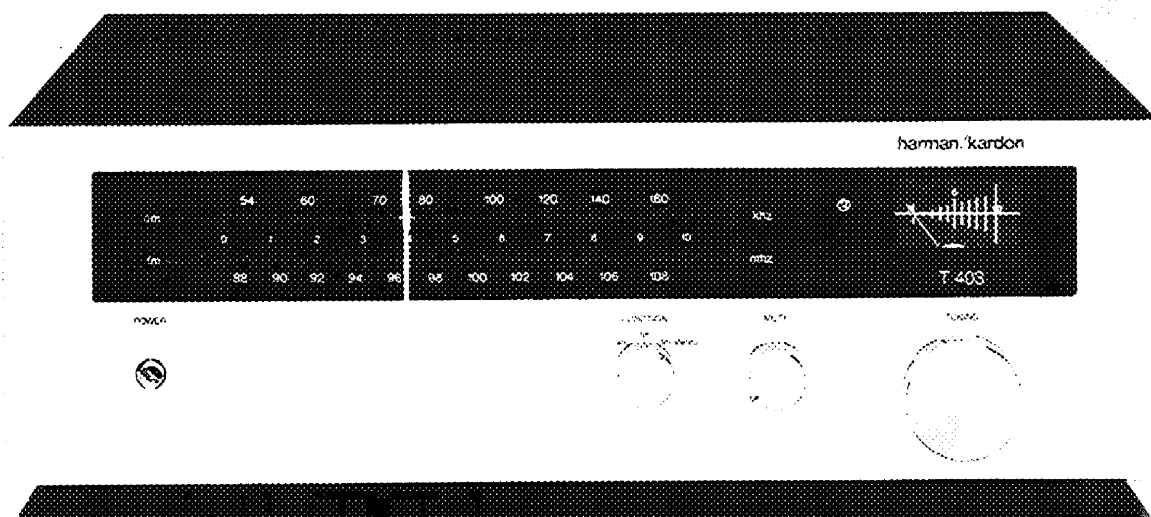
T-403
am/stereo fm tuner
owner's manual



INTRODUCTION

Your investment in a component high fidelity system indicates you have a more than average interest in music. The fact that your investment includes a Harman Kardon FM Tuner shows us your appreciation of uncompromised reproduction of the music you enjoy. Throughout the design and manufacture of this tuner, we have made every effort to assure it will meet all of your expectations.

Read each section of the manual completely before you begin to make the connections or control adjustments in that section. You will make the right connections or adjustments the first time and will thus shorten the process of installation.



WARNING:

To prevent fire or shock hazard,
do not expose this appliance to
rain or moisture.

CONNECTING THE T403

Before proceeding with the connection of the T403 you should make a record of your purchase. Since you have just purchased the unit, you should still have the bill of sale. Make sure it is clearly marked showing the date of purchase. Now look on the rear panel of your T403 and locate the serial number. Record this number on the bill of sale, then put it away in a safe place for future reference. This number will be important if your unit ever requires warranty service. It also provides identification if your unit is stolen.

Place the T403 on a shelf or table near where it will finally be located. Leave enough working space to make your connections easily.

INSTALLATION

The T403 produces very little heat and may be installed without special considerations for ventilation. It is recommended, however, that you avoid placing the tuner directly over heat-producing units such as a power amplifier.

POWER REQUIREMENT

The T403 operates on 117 volts, 50/60 Hz AC. Voltage may vary from 105 to 125 volts without affecting performance.

FM ANTENNA CONNECTIONS

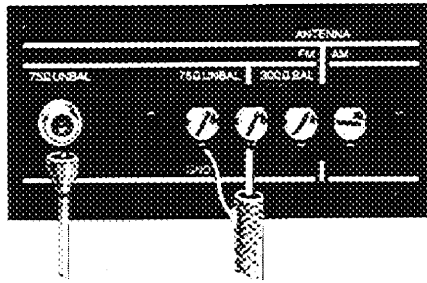
A "T" shaped, folded dipole antenna is provided with the T403 for FM reception. However, FM performance will be greatly enhanced if it is connected to an outdoor antenna system. Two types of wire, 300 ohm and 75 ohm, are used as lead-in for outdoor antenna systems. Both types can be connected to the T403. Find the four-connector terminal strip on the rear panel marked ANTENNA.

If your lead-in is 300 ohm, it will be a very flat cable with a conductor at each edge. Connect one of them to each of the terminals on the ANTENNA

strip under the bracket labeled 300 Ω BAL. (The term "ohm" and the symbol " Ω " have equivalent meaning.)

If your lead-in is 75 ohm, it will be a round cable with a short length of bare, solid, copper-colored wire protruding from its center and an outer wire mesh braid. The solid wire should be connected to the antenna terminal marked 75 Ω UNBAL, the second terminal from the left. The wire braid should be connected to the 75 ohm GND terminal. If your 75 ohm lead has a round coaxial connector, it must be tightened onto the threaded antenna receptacle marked 75 Ω UNBAL.

If no outdoor antenna is available, connect the lugs of the dipole antenna to the 300 Ω BAL terminals.



AM ANTENNA CONNECTIONS

A ferrite loopstick AM antenna is provided on the rear of the T403 that will yield good reception in many areas. It can be oriented to improve reception of distant stations. One terminal of the ANTENNA strip is a connection for a "long wire" AM antenna. AM reception over extremely long distances can be obtained with a well-designed long wire antenna.

WARNING: DO NOT USE FERRITE LOOPSTICK AM ANTENNA FOR A HANDLE. ITS BRACKET CANNOT SUPPORT THE WEIGHT OF THE 403. THE 403 SHOULD NEVER BE LIFTED, PULLED, OR PUSHED BY GRIPPING THE AM ANTENNA.

DETECTOR OUTPUT

The detector output is provided to connect FM four-channel signals to a decoding device suitable for a quad-raphonic broadcast system.

FIXED OUTPUT

These receptacles provide the full output of the T403. They should be connected to your preamplifier or tape recorder. Never connect them directly to a power amplifier.

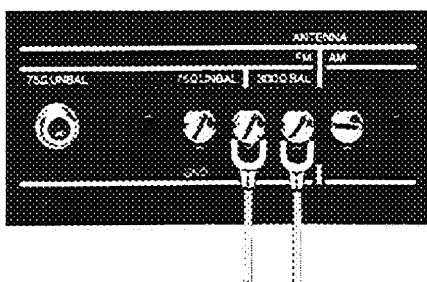
VARIABLE OUTPUT

The pair of outputs marked VARIABLE should be used when control over the output level of the tuner is desired. Output level is adjusted by the control nearby marked VARIABLE ADJUST. Clockwise rotation increases the strength of the signal from the tuner output. Use this control when adjusting the level of your tuner to match the level of other source material in your system such as a phonograph, tape recorder, etc.

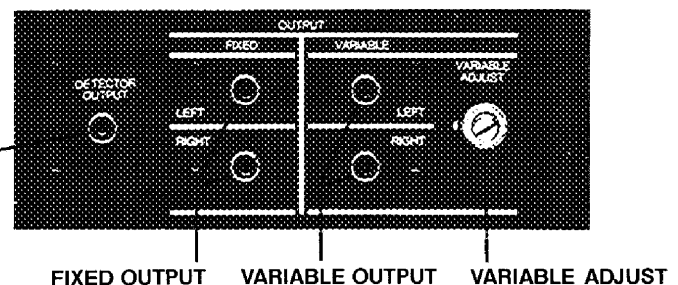
VARIABLE ADJUST

This controls the output level of the T403 at the Variable Output receptacles. The control should be preset to match the level with other sources in your system.

To make this adjustment, set your amplifier function switch to Phono. Playing a disc, adjust the amplifier volume control for a comfortable loudness level. Switch the amplifier to the input used for your T403, listening for differences in loudness level. Adjust the VARIABLE ADJUST control at the rear of the T403 to equalize its level with that of the disc. The volume control of your amplifier remains the master level control over your system.

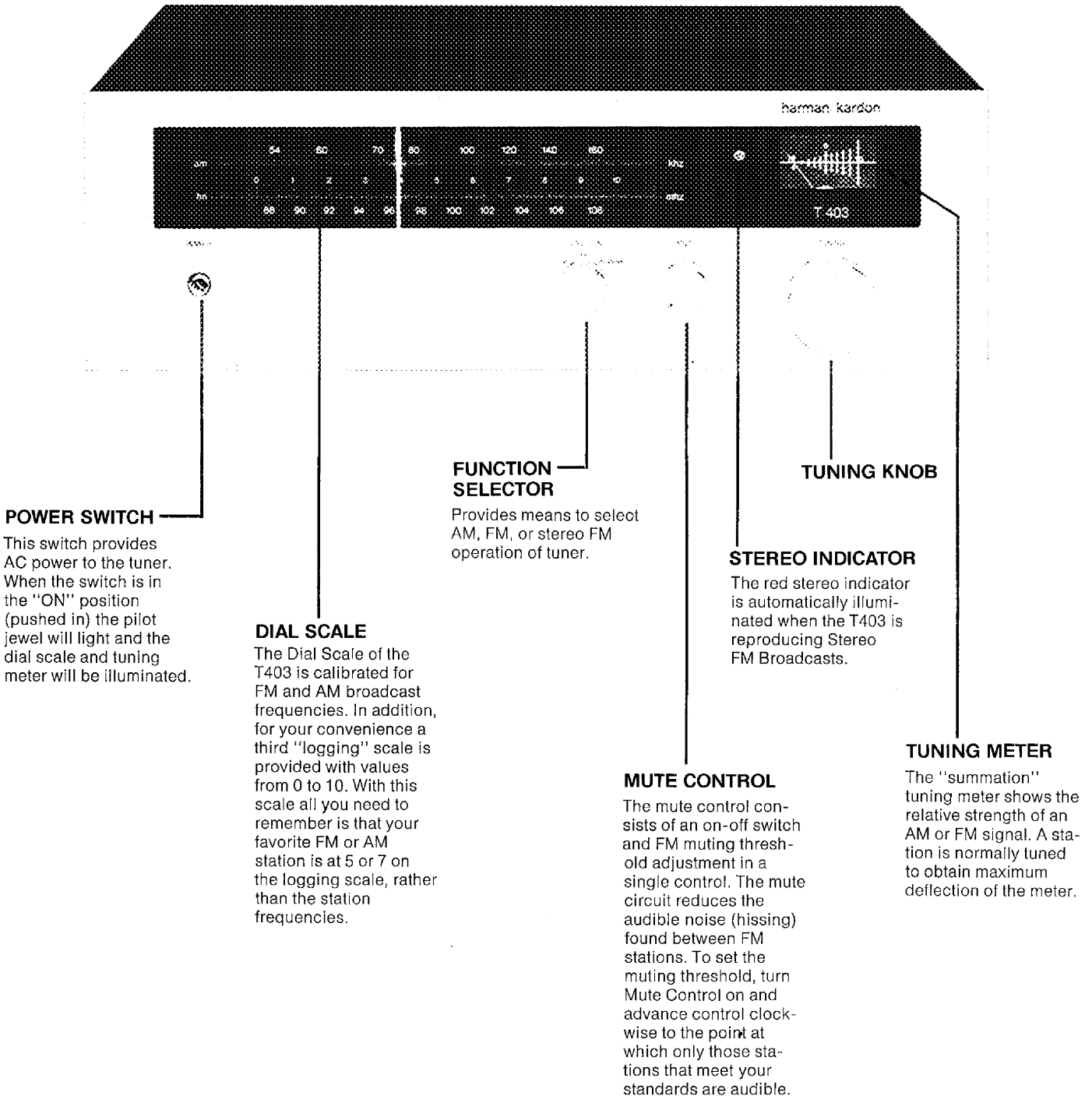


DETECTOR OUTPUT

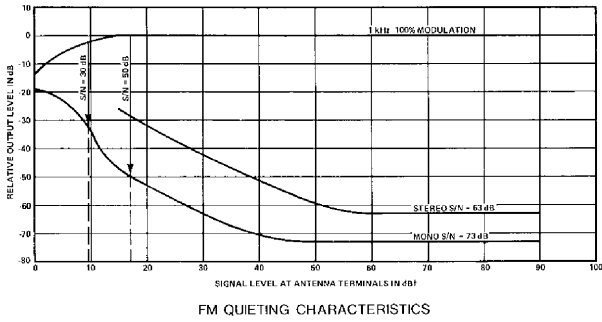


OPERATING CONTROLS AND INDICATORS

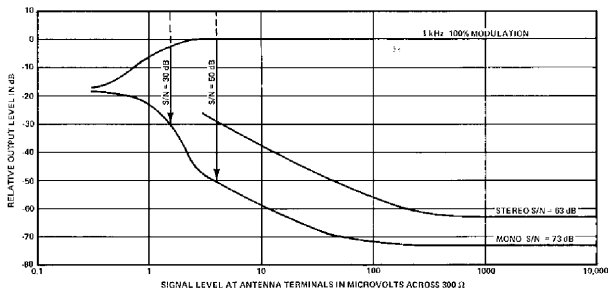
Familiarize yourself with the front panel controls. There are three knobs and a push button controlling the tuner. Each control has a specific function described in the following paragraphs.



SPECIFICATIONS



FM QUIETING CHARACTERISTICS



FM QUIETING CHARACTERISTICS

- FM Sensitivity:** less than 14.8 dBf
- Quieting Sensitivity:** less than 17.0 dBf
- Limiter Saturation:** less than 14.8 dBf
- Signal to Noise Ratio:** -70dB (at 65 dBf)
- Multiplex Separation:** greater than 30 dB
- Selectivity:** greater than 50 dB (400 kHz bandwidth)

- Capture Ratio:** less than 2.0 dB
- Audio Frequency Response:** 6 Hz to 120 kHz -3.0 dB
- Harmonic Distortion:** 0.5% (mono)
0.7% (stereo)

- AM Rejection:** greater than -55 dB
- Image Rejection:** greater than -45 dB
- IF Rejection:** greater than -80 dB
- Fundamental + 1/2 IF:** greater than -70 dB
- Multiplex Pilot Rejection:** greater than -45 dB
- SCA Rejection:** inaudible
- De-emphasis:** 75 microseconds ± 1.5 dB
(50 microseconds on European models)

- Mute Threshold:** variable over 22.1 to 47.2 dBf
- Mute Effect:** greater than -60 dB
- Audio Output:** 2.0 volts (fixed output)
20 millivolts to 2.0 volts (variable output)
- Dimensions:** 15-3/4" W x 15-1/2" D x 5-1/2" H
(400mm x 394mm x 140mm)
- Weight:** 15 lbs. 6 oz.
(7.0 kg.)