

owner's manual

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INTRODUCTION

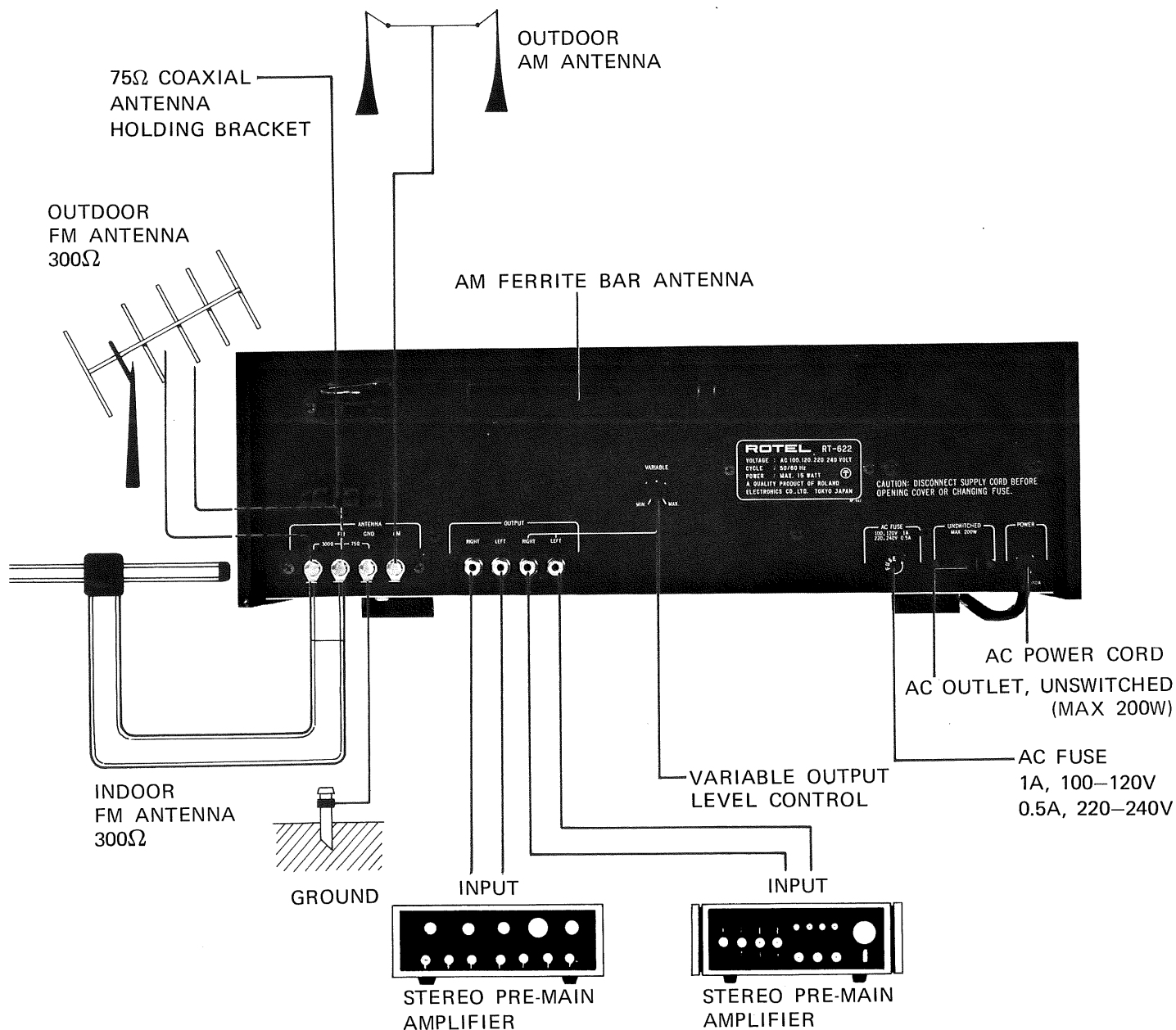
We would like to take this opportunity to thank you for purchasing our Stereo Tuner. With the high quality design and workmanship that goes into making this equipment, you can be assured of its flawless performance for many years to come.

We have fitted every control and feature you could conceivably need. Designed for both versatility and ease of operation, this piece of equipment will add professional studio flexibility to your Hi-Fi sound center. The performance is exceptional; it will allow you to

experience true high fidelity as never before. Its full and natural stereophonic reproduction offers you musical entertainment approaching that of live performances. We sincerely hope you will treasure this professional equipment. In order to obtain the maximum use out of your unit, please read the following pages of this Owner's Manual carefully.

Do not attempt to operate the unit until you have made all the necessary connections.

REAR PANEL CONNECTIONS



INSTALLATION

IMPORTANT: Do not apply power to this unit without first making sure that all the necessary connections are properly made.

AM ANTENNA CONNECTION

No external antenna will generally be required for AM, since a ferrite loopstick antenna is supplied at the rear of the unit. For best possible reception, extend the loopstick fully away from the tuner chassis.

If you live in a difficult reception area, the use of an external or outdoor antenna may be desirable. Connect a single wire antenna lead to the terminal marked AM on the rear chassis. The wire antenna should be as long as possible, and oriented for best reception. It must be kept away from large metal objects, power lines or electrical machinery to insure reception without extraneous noise.

FM ANTENNA CONNECTION

Owing to the high sensitivity of the FM tuner section of the unit, the antenna wire supplied is sufficient for most locations. Connect this to both FM antenna terminals marked 300 ohms, and mount horizontally, for instance by tacking to the shelf on which the receiver is mounted. In difficult reception areas, the use of an outdoor antenna may prove necessary. Follow its instructions for proper connection.

When using a 75-ohm unbalanced coaxial cable for antenna, connect between 75-ohm and G terminal posts with the outer conductor or shield of the cable connected to the G terminal after fixing the cable through the holding bracket.

GROUND

Although it is not necessary to do so, but if you wish to ground the tuner, connect a wire from the terminal designated GND on the rear chassis to the ground terminal on your amplifier or to a nail driven into the earth.

VARIABLE AND NON-VARIABLE OUTPUTS

There are two pairs of output jacks designated LEFT and RIGHT on the rear chassis. The left hand pair is a standard, non-variable output for use with most standard amplifiers. These pair of output should be connected to the corresponding left and right input (TUNER or AUX) jacks on your amplifier. For your convenience, the connecting cables for this purpose are supplied with this unit.

The right hand pair is a variable output of which output level can be varied from 0 to 0.3V (30%, 400Hz) for AM and from 0 to 1.5V (100%, 400Hz) for FM with the knob

marked VARIABLE on the right hand side. This output is for use with amplifiers whose input level requirements are different from the standard amplifiers. The VARIABLE knob at its left most position is 0 output. Turning it to the right will increase the output level proportionately, and at its right most position, the output level will be at maximum (same level as that for standard output).

To achieve appropriate output level for your amplifier's input requirement, set the VARIABLE knob to the position where the sound from the speakers is equally loud as when a record player is played through your amplifier (with the volume setting set at the same level).

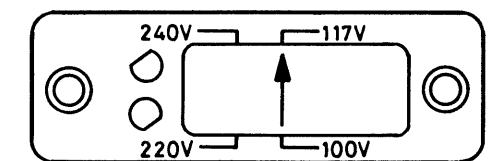
AC POWER INPUT CORD

Your tuner has been specially designed so that it may be connected to a variety of power sources. You may connect the AC Power Input Cord directly to a wall plug, in which case the power will be supplied to the tuner independent of your amplifier. Or, you may connect it to your amplifier's switched or unswitched AC outlet. If it is connected to a switched outlet, by leaving the Power button of the tuner on, you will be able to maintain switching control for the tuner with your amplifier. If it is connected to an unswitched outlet, like connecting to a wall outlet you must use the tuner's own power button for switching control.

VOLTAGE SELECTION

The tuner is a variable voltage equipment that can run on 100V, 117V, 220V or 240V power supply. Your unit comes already preset at the proper voltage for use in your area; however, if you move to an area where the power supply voltage is different, the voltage setting can be manually changed. **BE SURE THAT YOUR UNIT IS NOT CONNECTED TO THE POWER SOURCE BEFORE ATTEMPTING TO MAKE THIS CHANGE.**

To change the voltage setting, remove the cabinet and locate the VOLTAGE SELECTOR (see figure below). Pull up the Voltage Selector plug which has a white arrow on its top. Reinsert the plug to the Selector Base so that the head of the arrow lines up with the pointer line of the voltage you desire.



CONNECTING TO POWER SUPPLY

Before connecting up ensure that the voltage selector is set correctly for your supply, and a suitable plug fitted. If you need to fit a plug, ensure live, neutral and (where appropriate) earth leads are connected to the proper terminals.

The unit is protected with a 1 amp fuse in the AC input

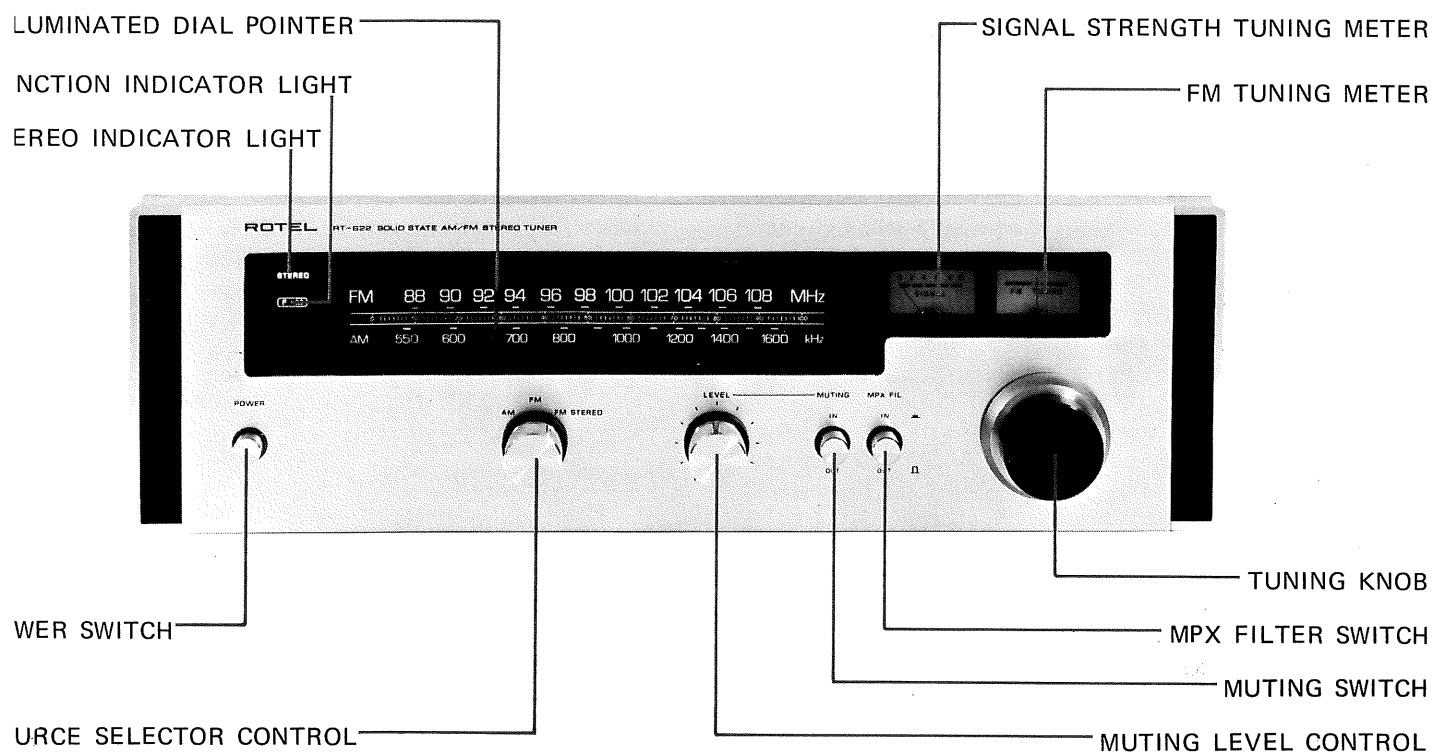
circuit. When replacing a fuse, be sure to use a fuse of the same rating. DO NOT replace with a fuse of higher rating. Protection will be lost, and severe damage to the unit may result.

If in any doubt about connecting the power supply, consult a qualified electrician.

MUTING SWITCH: allows you to activate a circuit to reduce annoying interstation noise in FM band. Push "IN" to activate and push OUT to deactivate. The switch is used in conjunction with the MUTING LEVEL control which varies effect of muting.

STEREO INDICATOR LIGHT: automatically lights up on the dial glass to visually indicate whenever an FM stereo broadcast is tuned.

FRONT PANEL CONTROLS



TUNING KNOB: heavy flywheel action allows easy and precise tuning on both AM and FM stations.

MPX FILTER SWITCH: allows you to reduce annoying noise mixed in with signal. This switch, however, should not be always left at IN position unless it is necessary.

SOURCE SELECTOR CONTROL: enables you to select the program you desire from AM, FM AUTO, STEREO ONLY (FM) and FM MONO.

MUTING LEVEL CONTROL: allows you to vary the effect of reducing interstation noise in FM band, and is activated only when the MUTING switch is activated. Turn clockwise to strengthen muting effect and counter-clockwise to weaken. Refer to OPERATION section in this owner's manual for usage.

SIGNAL STRENGTH TUNING METER: shows the level of the incoming signal. When used in the AM position, tune for maximum deflection to the right for best possible reception. When used in the FM position, also tune for maximum indication but operate in conjunction with the FM tuning meter.

POWER SWITCH: supplies power to the tuner. When the switch is ON, dial scale will be illuminated.

FM CENTER TUNING METER: designed to operate on a null or "zero" center principal. Tune for the dead center position for best possible reception and minimum distortion.

FUNCTION INDICATOR LIGHT: visually indicates the selected program FM or AM.

OPERATION

Having made all connections according to the preceding instructions and become familiar with the functions of the unit, you are ready to operate the equipment. Apply power by plugging into the power source and pushing in the POWER button.

RECEIVING FM AND AM BROADCASTS

1. FM STEREO

Under normal use for all FM broadcasts the source selector control should be placed in the FM STEREO position. This tuner is equipped with a stereo sensing circuit which will automatically determine whether your unit is receiving monophonic or stereophonic broadcasts, and then automatically adjust the mode of operation. If the station is transmitting stereo, your tuner will automatically switch on the multiplex section and you will hear the broadcast in full stereo. Should the station conclude broadcasting in stereo, your tuner will automatically switch back to monophonic reception.

PRELIMINARY CHECK: If the dial scale has failed illuminate, remove and check the AC fuse. If the fuse is blown, check possible reasons for the blow-out (e.g. defective AC power cord, etc.) and replace the fuse.

2. FM

Should you wish to receive monophonic signal, or weak stereo signal whose quality has been degraded by noise and poor signal conditions and so may be necessary to be heard in mono, turn the source selector control to FM. Tune for the desired station with the tuning knob, using the tuning meters to assure the strongest possible reception.

3. AM

Should you wish to listen to AM broadcasts, turn the SOURCE SELECTOR control to AM. Though AM gives only monophonic signal, the tuner will convert the signal to two channels enabling you to listen from two speakers as in stereo.

MUTING

Whenever you tune for an FM station, you will hear rather loud interstation noise; this is normal for all highly sensitive FM tuners and is not peculiar to this tuner.

To reduce this bothersome interstation noise, your tuner is equipped with a unique MUTING control. Muting is effected by pushing the MUTING switch "IN", but the level of muting may be varied to suit your purpose by adjusting the MUTING LEVEL control. Muting is adjustable from $3\mu\text{V}$ muting at the left most position of the control to the maximum muting ($20\mu\text{V}$) at the right most position.

If you wish to tune in a weak station, set the MUTING LEVEL control at relatively low position so that muting will not suppress the weak signals. For tuning in strong stations, the MUTING LEVEL control may be set at maximum.

The MUTING switch should normally be turned OFF when you have tuned in the desired station, but it may be left ON without causing perceptible effect upon program reproduction. Again, however, if you have tuned in a weak station, the MUTING switch should definitely be turned OFF to assure strongest possible signal reception.

SPECIFICATIONS

FM Sensitivity (IHF)	1.7 μV	AM Sensitivity (IHF)	15 μV
Frequency Range	88 — 108 MHz	Frequency Range	535 — 1605 kHz
Harmonic Distortion	less than 0.5%	Image Rejection	75 db at 1 MHz
Signal to Noise Ratio	70 db	IF Rejection	75 db at 1 MHz
Capture Ratio	1.5 db	Signal to Noise Ratio	50 db
Selectivity	60 db	Selectivity	40 db
Stereo Separation	40 db at 1 kHz	DIMENSIONS	16-1/2" (W) x 12" (D) x 5-1/2" (H)
Image Rejection	100 db	WEIGHT	17 lbs/8 kg
IF Rejection	100 db		
Spurious Response Rejection ...	100 db		

Note: features and specifications subject to changes for improvement without prior notice.

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