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Melodica

THUNDER

Integrated Amplifier

Thank you for selecting the THUNDER as part of your music listening system. The engineers and designers at Melodica Sound have spent countless hours of listening and testing to create an integrated amplifier of the highest caliber for music reproduction. The THUNDER has been designed to provide you many years of playback.

Please take a few minutes to read through this guide to help you better understand and optimize your new integrated amplifier. If you have any questions regarding the operational functions, contact us for assistance.

Sit back and enjoy your new integrated amplifier and the enhancements it will bring to your system. The THUNDER will bring new life to your entire music collection.

Happy Listening!

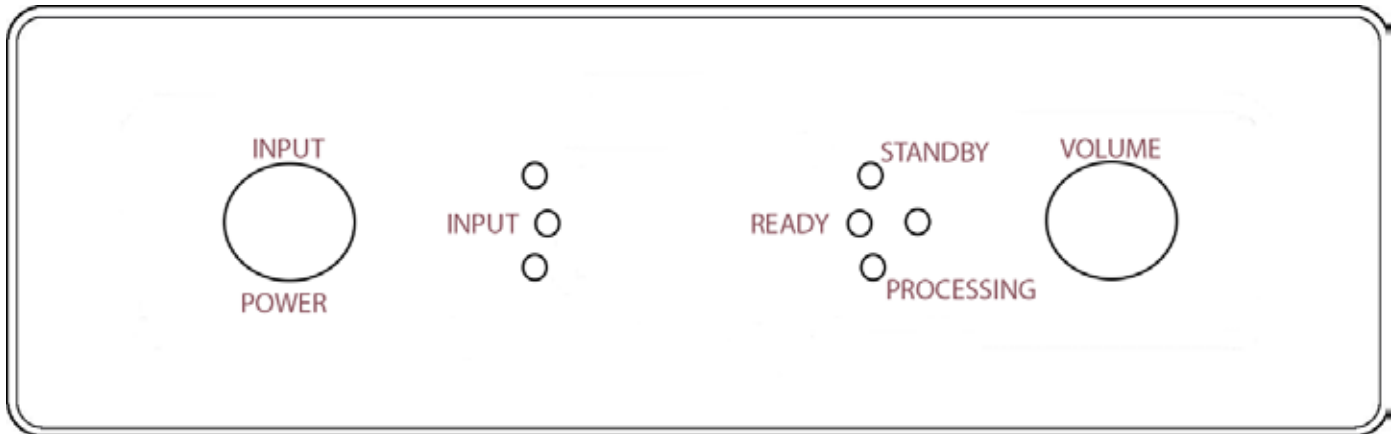


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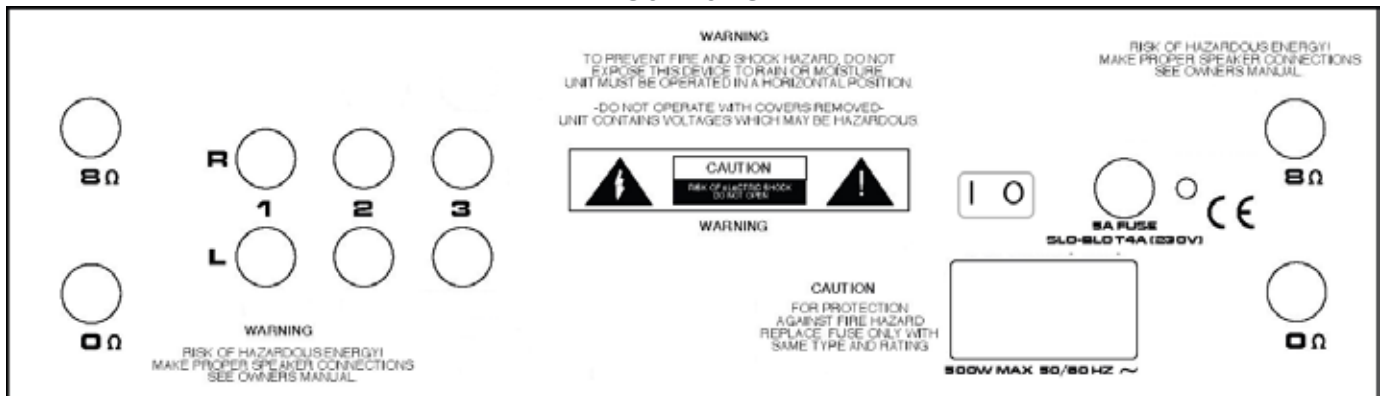
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Illustrations

Front Panel



Rear Panel



Warnings

Do not touch hot tubes. Keep away from children.

To prevent fire, or shock hazard, do not expose your THUNDER to rain or moisture.

This unit contains voltages which can cause serious injury or death. Do not operate with top plate removed. Refer servicing to your authorized Melodica Sound dealer or other qualified personnel.

The detachable power cord on your THUNDER is equipped with a heavy gauge, 3-conductor cable and a standard three-prong grounding plug. For absolute protection, do not defeat the ground power plug. This provides power line grounding of the THUNDER chassis to provide absolute protection from electrical shock.

For continued protection against fire hazard, replace the fuse only with the same type and rating as specified at the fuse holder.

The appliance coupler at the rear of this unit must be accessible for emergency power disconnect.

A note about packaging...

Save all packaging in a dry place away from fire hazard. Your THUNDER Integrated Amplifier is a precision electronic instrument and should be properly packed any time shipment is made. Because of its weight, it is highly probable that the unit will be damaged during shipment if repackaged in cartoning other than that designed for the unit. You may not have occasion to return your unit to the factory for service, but if that should prove necessary, or other occasion requiring shipment occurs, the original packaging will protect your THUNDER from unnecessary damage or delay.

Installation

Vacuum Tubes

Before you operate the THUNDER

Your THUNDER amplifier is shipped with the vacuum tubes packed in foam blocks. These must be unpacked and installed before you attempt to operate the amplifier. Included are two KT150 output tubes, two 6J5GT triodes used in the input stage and one 5U4GB used in rectifier. Proceed according to the following instructions.

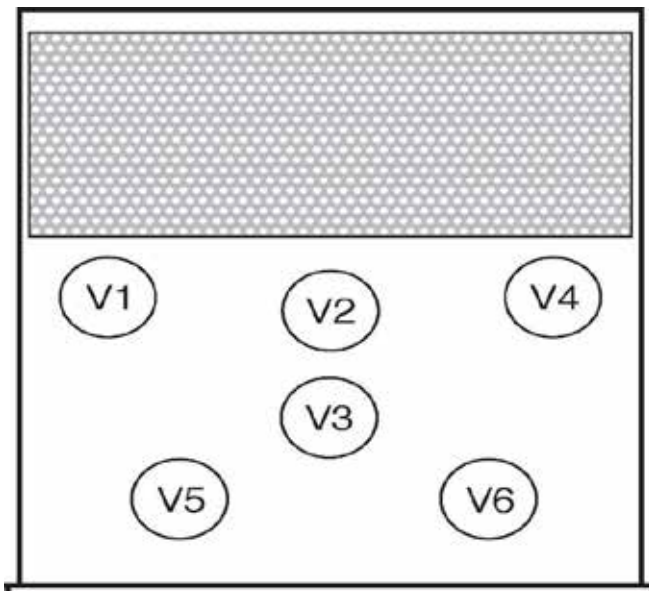
Carefully remove each vacuum tube from its protective foam and match its location according to the "V" number show in list below:

V1, V4 – KT150 only!;

V2, V3 – 5U4GB or 5U3C;

V5, V6 – 6J5GT or 6C2C.

Firmly seat each tube in its matching socket, taking care to "key" the tube pins to the socket holes. Retain the foam blocks with other packing materials for possible future use.



Note: damping rings are installed at the factory on each 6J5GT tube for maximum sonic performance.

In your system

To insure normal component life and safe operation this unit must be operated only in a horizontal (upright) position. Adequate airflow and proper cooling thereby can occur only if there is no restriction below, behind and above the unit.

The four special bronze feet with rubber rings provide adequate spacing only from a smooth, hard surface. Never operate the unit while it is sitting on a surface such as a rug or carpet.

If the unit is to be operated in an enclosed equipment cabinet, an exhaust fan is desirable so as not to operate the THUNDER in overheated ambient air. The "ambient" operating temperature should never exceed 120° F or 49° C. Improper installation will cause premature tubes failure and will affect your warranty, as well as the service life of the unit.

It is normal for a vacuum tube power amplifier to run quite warm, and if used for prolonged periods, hot to the touch. All components within are, however, operated at safe, conservative levels and will not be improperly affected thereby, providing the requirements outlined above are adhered to.

Connections

Rear Panel Connections

ALL three sets of single-ended inputs are clearly marked to indicate use. 4-Output binding posts (+) and (-), L & R, for 8 ohm speaker connection, 1 - Power line cord inlet, 1 - Power line fuseholder, 1 - Standby power switch.

Matching

It is important to use as close as possible an impedance match between the amplifier and speaker for optimum transfer of power to the speaker with minimum distortion. In the case of speaker systems with significant variations in impedance throughout the frequency spectrum, such as most electrostatic types, determine the best impedance match empirically for best overall sonic results.

It is important sonically that your entire system be connected so that the audio signal arriving at the speakers has correct, or "absolute" polarity (i.e., non-inverted). Connect the black or (-) speaker terminal to the wire that connects to the black or (-) terminal on the THUNDER. Connect the red or (+) speaker terminal to the wire that connects to the red or (+) terminal on the THUNDER, and tighten the speaker terminals securely to ensure best sonic results.

About cables

Use the best available speaker wires and interconnects. Melodica Sound cannot emphasize this enough. As better components and systems are developed, it becomes increasingly important to avoid the limitations of inferior system interconnections. Connect the THUNDER input to the source components using only the highest grade of audio interconnect cables. To avoid sonic degradation use the shortest practical length of cables.

A.C. Power Connection

It is essential that the amplifier be connected to a wall AC power receptacle, or a similar heavy-duty source. If it is connected to convenience receptacles on preamplifiers, etc., the full sonic capabilities of both the THUNDER and the preamplifier will be compromised.

For the very best sonic performance, the THUNDER should be connected to its own AC power circuit branch, protected by a 10 or 15 amp breaker. The other audio equipment should be connected to a different power circuit and breaker. Avoid the use of extension cords. If they must be used on a temporary basis, use 14-gauge or heavier cords.

The THUNDER utilizes a compatible grounding system that generally does not require a "ground lifter" adapter plug on the AC power cord to minimize hum. The 14-gauge power cord supplied with the THUNDER has a standard three-prong grounding plug to provide maximum safety when it is connected to a grounded wall receptacle. If there is any question regarding the safety of grounding procedures, be certain to seek competent help with the installation.

If electronic crossovers or other AC powered equipment are used with the THUNDER it may be necessary to use "ground lifter" adapters on the power plugs of that equipment to minimize system hum. Generally, the lowest hum is achieved when the only direct connection between audio common "ground" and true earth ground occurs in the preamplifier, through its grounded power cord. Other equipment in the system should have some form of isolation to prevent ground loops and associated hum.

Operation

Power-up Procedure

Make sure you have read and complied with the Installation and Connection instructions prior to attempting operation.

Set the "Standby" switch at "On" mode at rear panel. Lamp "Standby" at the front panel will light after a few seconds. Now amplifier is in standby mode and ready for turn on. Then press the "Power" button at the front panel or remote control. Before one, "Volume control" will automatic set to 20% of maximum sound level, then the "Processing" lamp will start flash for a 40 seconds while tubes is heating, that indicating normal operation of automatic voltage restriction circuit. After that lamps "Ready" and "Input number" will be light. The number of input in first time switching on will settled at first Single-Ended input.

Note:

If the lamp "Standby" does not illuminate after setting the "Standby" switch at "On" mode, check the appropriate fuse for failure. An extra fuse for A.C. power is included with your THUNDER.

Switch Input selector for desired source and adjust Volume control as necessary.

Your THUNDER should now operate satisfactorily. However, a full stabilization or warm-up time of approximately half hour is recommended for best sonic performance.

Shut-Down

Press the "Power" button to shut unit off. At that time lamp "Standby" will be flashing about 40 seconds. Waiting until off all other lamps and light "Standby". Now amplifier is in standby mode.

General Notes about Usage

If you turn off the THUNDER wait at least five minutes before turning it on again. This brief cool down period will reduce stress on the output tubes and potential damage to them.

Melodica Sound does not recommend leaving your THUNDER on 24 hours a day as is the custom of some listeners to achieve maximum sonic performance on demand. While this is often recommended for solid-state equipment, Melodica Sound does not recommend this procedure for vacuum tube power amplifiers. (2,000 hours of tube life will pass by in 84 days!)

Caution:

Do not leave the "Standby" switch on when the amplifier is not using a long time or you a leaving out for caution of damage from possible power line interference.

Operation

Resetting Controls

To avoid discharging static to the THUNDER controls, contact another surface (such as a metal equipment rack) to drain away the charge before touching the THUNDER. If a static charge should "lock up" the microprocessor making the front panel controls inoperable, unplug the THUNDER from its power receptacle. After waiting two minutes, plug in the THUNDER and power it up with the rest of the system; the controls should resume normal operation. If the problem persists, contact your dealer or Melodica Sound Customer Support at service@melodisound.com.

Automatic Voltage Restriction Function

The THUNDER has several provisions to help protect against misuse of the exceptional dynamic range and wide bandwidth that it offers. It is not subject to damage itself, but some speakers are more limited in their ability to withstand signal extremes. However, for absolute protection of associated equipment, some operator understanding and responsibility are required.

Initial "settling" time of all circuit parameters within the THUNDER requires approximately 5 to 10 minutes. The automatic voltage restriction circuitry timer is adjusted for about 40 seconds.

It is highly recommended that manual muting be employed during power turn-off or switching input for maximum protection.

Operation

Front Panel Control Functions

Volume Control:

Rotating of volume control decreases or increases the volume level. Note that the THUNDER has automatic motorizing the volume control adjustment range. The corresponding level is indicated on the knob.

Input:

Allows selection of any of three single-ended input sources 1, 2 and 3. Rotating the Input selector switch steps through each input and indicated with the corresponding lamp. Single-ended input 1 is an preferred for more often usable, because it's default on.

Power:

Toggles power on and off main transformer from AC wall outlet to THUNDER.

Bias:

Rotate to adjusting vacuum tubes bias for THUNDER (see page 15 for further details on adjusting bias).

Remote Control Functions

In addition to the functions on the front panel, the handheld remote also offers the following functions:

Mute:

Pressing the Mute button one time and wait before volume level will automatic decreased to 10% from maximum sound level. Pressing the Mute button again and wait before volume level will automatic restore to previously level.

Input:

Allows selection of any of three single-ended input sources 1, 2 and 3. Pressing the Input selector button steps through each input and indicated with the corresponding lamp.

Power:

Toggles power on and off main transformer from AC wall outlet to THUNDER.

Volume Control:

Pressing the down or up button decreases or increases the volume level. Note that the THUNDER has automatic motorizing the volume control adjustment range. The corresponding level is indicated on the knob.

Maintenance

Adjusting Vacuum Tube Bias

As shipped from the factory, the output "bias" adjustments are set for a nominal 135mA per KT150 tube. Under these idle conditions the tubes are each dissipating a conservative amount of power of their total capacity. This point of operation provides "enriched" Class A, and will satisfy the most critical listener.

For best results, operate and adjust the THUNDER at 120V AC. Adjustment must be made under zero-signal conditions after at least 15-20 minutes of uninterrupted stabilization time.

The Bias control modules is located at side walls of amplifier. Each module for each output tube. For adjustment the bias level rotate knob until indicator arrow reached begin of red zone. This is optimal bias level - 135mA. Repeat the procedure for every tube.



Control bias level every month for optimal operating mode and prevent tubes damaging.

Servicing

Caution: Your THUNDER contains sufficient levels of voltage and current to be lethal. Do not tamper with a component or parts inside the unit. Refer any needed service to your authorized Melodica Sound dealer or other qualified technician. Should service be necessary, please contact your Melodica Sound dealer, or Melodica Sound Customer Support at service@melodisound.com.

Vacuum Tubes

It is recommended that you replace the vacuum tubes of your THUNDER in sets. All of the tubes in your amplifier have been matched to have similar operating characteristics, to provide the best sound quality and reliability. In the event you need to replace a single output tube, please refer to the numbers written on the silver base at the bottom of the vacuum tube when ordering a new tube.

Cleaning

To maintain the visual appearance of your THUNDER, occasionally wipe the front panel and top cover surfaces with a soft damp (not wet) cloth to remove dust. A mild, non-alkaline soap solution may be used to remove fingerprints or similar smudges. Cleaners containing abrasives should not be used as they will damage the brushed grain of the panels finish and wood parts. A dry 2-inch pure bristle paint brush works well to remove dust from bevels, reliefs and switches.

Disposal and Recycling Guidelines



To dispose of this electronic product, do not place in landfill. In accordance with the European Union Waste Electrical and Electronic Equipment (WEEE) directive effective August 2005, this product may contain regulated materials which upon disposal require special reuse and recycling processing. Please contact your dealer or importing distributor for instructions on proper disposal of this product in your country. Or, contact Melodica Sound Corporation for the name of your importing distributor and how to contact them. Packing and shipping materials may be disposed of in a normal manner.

Limited Warranty

Melodica Sound Corporation products are covered by a 10-Year Limited Warranty or a 90-Day Limited Warranty (vacuum tubes). This Limited Warranty initiates from the date of purchase, and is Limited to the original purchaser, or in the case of demonstration equipment, limited to the balance of warranty remaining after original shipment to the retailer or importer.

In the United States, the specific terms, conditions and remedies for fulfillment of this Limited Warranty are listed on the warranty card accompanying the product in its shipping carton. The warranty terms are also available on the internet at www.melodisound.com/warranty-statement. Outside the United States, the authorized importing retailer or distributor has accepted the responsibility for warranty of Melodica Sound products sold by them.

The specific terms and remedies for fulfillment of the Limited Warranty may vary from country to country. Warranty service should normally be obtained from the importing retailer or distributor from whom the product was purchased.

In the unlikely event that technical service beyond the ability of the importer is required, Melodica Sound will fulfill the terms and conditions of the Limited Warranty. Such product must be returned at the purchaser's expense to the Melodica Sound factory, along with a photocopy of the dated purchase receipt for the product, a written description of the problem(s) encountered, and any information necessary for return shipment. The cost of return shipment is the responsibility of the purchaser.

Specifications

Power Output: 10 watts per channel continuous from 20Hz to 20kHz. 1 kHz total harmonic distortion typically 1.0% at 10 watts, .05% at 1 watt.

Approximate actual power available at "clipping" 10 watts (1kHz). (Note that actual power output is dependent upon both line voltage and "condition" i.e.: if power line has high distortion, maximum power will be affected adversely, although from a listening standpoint this is not very critical.)

Power Bandwidth: (-3dB points) 12Hz to 70kHz.

Frequency Response: (-3dB points at 1 watt) 1.0Hz to 70 kHz.

Input Sensitivity: 0.75V RMS Single-ended for rated output. (32.5dB gain into 8 ohms.)

Input Impedance: 10.0K ohms Single-ended.

Inputs (3): 1, 2, 3 (Single Ended RCA connectors).

Maximum Input: 2V RMS (any input).

Output Polarity: Non-Inverting (any input).

Push Buttons: Power. All functions on IR remote control.

Rotary knobs: Volume up, Volume down, Input, Bias. All functions on IR remote control.

Output Taps: 8 ohms.

Output Regulation: Approximately 2dB 8 ohm load to open circuit (Damping factor approximately 4).

Overall Negative Feedback: **4dB**.

Hum & Noise: Less than 1.0 mV RMS -88dB below rated output (IHF weighted, Vol down).

Power Supplies: Automatic 40 sec. warm-up/voltage restriction and brown-out mute.

Power Supply Energy Storage: **Approximately 350 joules**.

Power Requirements: 100-125VAC 60Hz (200-250VAC 50Hz) 300 watts at rated output, 450 watts maximum, 210 watts at "idle": 1.0 watt power off.

Tubes Required: Matched pair KT150-Power Output; 2 -6J5GT driver, 2 - 5U4G rectifier.

Dimensions:
Width 7" (42 cm)
Height 9" (23 cm)
Depth 14" (35 cm)

Rear connectors extend .88" beyond chassis.

Weight: 36.4 lbs. (16.5 kg) Net; 49.3 lbs. (22.4 kg) Shipping.

This unit is RoHS compliant

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