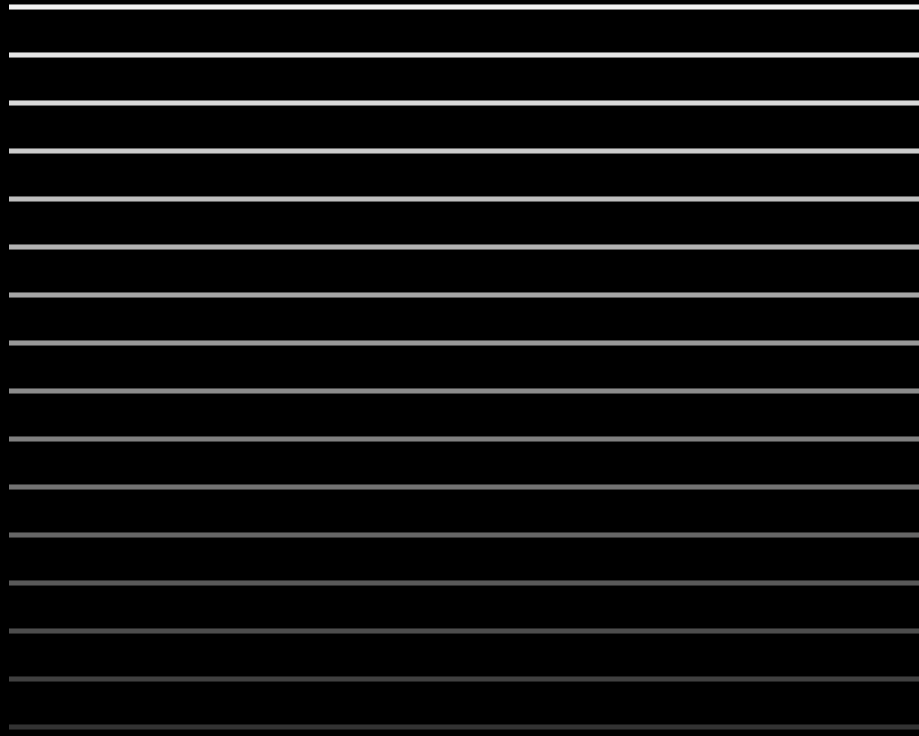


JEFF ROWLAND
DESIGN GROUP



Model 9T/Ti
Mono Power Amplifier
Owner's Manual

Introduction

Welcome to the Jeff Rowland Design Group “family” and congratulations on your purchase of what is unquestionably one of the world’s finest audio power amplifiers. ► With its combination of features such as numerous function control and interconnection possibilities, precision electronic circuitry and accurately machined chassis components throughout, your Model 9T/Ti Amplifiers will offer you many years of musically satisfying enjoyment. ► Please take a few moments to read the remainder of this Owner’s Manual. A thorough understanding of the operational features will allow you to gain the maximum performance and ease of use for which this Amplifier was designed. ► Please note that your Model 9T/Ti Monaural Amplifiers have different serial numbers on all chassis. The Amplifier serial numbers begin with the letter A; the Power Supply serial numbers begin with the letter P. These numbers are recorded below and are also located on the rear panel of each chassis. Please include these numbers with any correspondence regarding your Model 9T/Ti Amplifiers. ► It has been my joy to create an audio component of enduring value which will reflect a higher ideal of musical and artistic expression. It is my hope that these qualities will enrich your experience of ownership.

► Jeff Rowland Design Group, Inc.
2911 North Prospect Street
Colorado Springs, CO 80907
Phone: 719/473-1181
Fax: 719/633-4158

Enjoy the music!

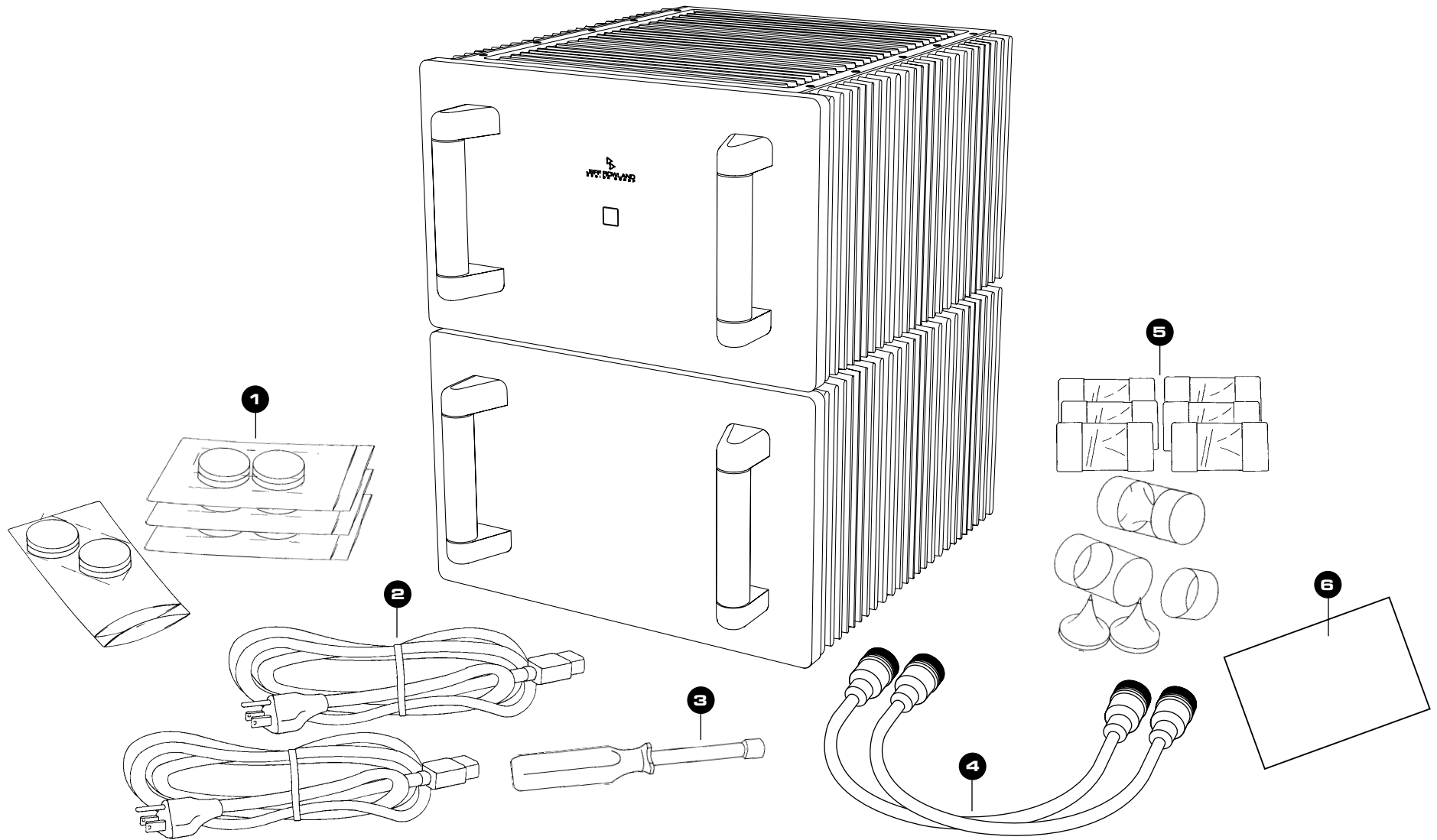
Jeff Rowland

President

Product Features

- ▶ Two parallel connected XLR Balanced Input jacks for balanced (Differential Mode™) system configurations
- ▶ Two parallel connected RCA Input jacks for unbalanced (single-ended) system configurations
- ▶ Two parallel connected speaker output connectors
- ▶ User-selectable overall gain of 26 or 32 dB
- ▶ User-selectable input impedance of 36k or 600 ohms for both balanced and unbalanced inputs.
- ▶ User-selectable absolute phase on balanced input
- ▶ User-selectable input muting
- ▶ User-selectable switching between balanced and unbalanced inputs
- ▶ Front panel standby/power button illumination can be turned off during listening
- ▶ Optional remote (wired or wireless) power ON/OFF switching
- ▶ Automatic temperature stabilizing circuitry maintains constant operating temperature
- ▶ Standby power condition reduces warm-up time
- ▶ Fail-safe operation provided by user-resettable AC and DC magnetic circuit breakers located on rear panel
- ▶ Quiet, transient-free operation during power and function mode switching
- ▶ Automatic input muting under anomalous input or output operating conditions
- ▶ Balanced Differential Mode™ circuit topology implemented from input to output
- ▶ Plug-in modules, containing critical electronic circuitry, enhance thermal stability, mechanical integrity and serviceability
- ▶ Low-resonance, structurally integrated chassis of precision machined aluminum alloy components

Contents



Initial Inspection

Inspect the shipping container for damage. If the shipping container, packing material, amplifier or accessories are damaged or missing, notify your dealer and the shipper (if a claim is to be made). Note: Many shippers require notification and an inspection within twenty-four (24) hours of delivery to ascertain the nature of damages incurred.

Your Model 9T/Ti Amplifier has undergone extensive performance evaluations, listening tests, quality control inspections and a minimum seventy-two (72) hour burn-in period prior to shipment and should be in a perfect operational condition upon receipt. If the Amplifier does not operate correctly, please notify your dealer immediately.

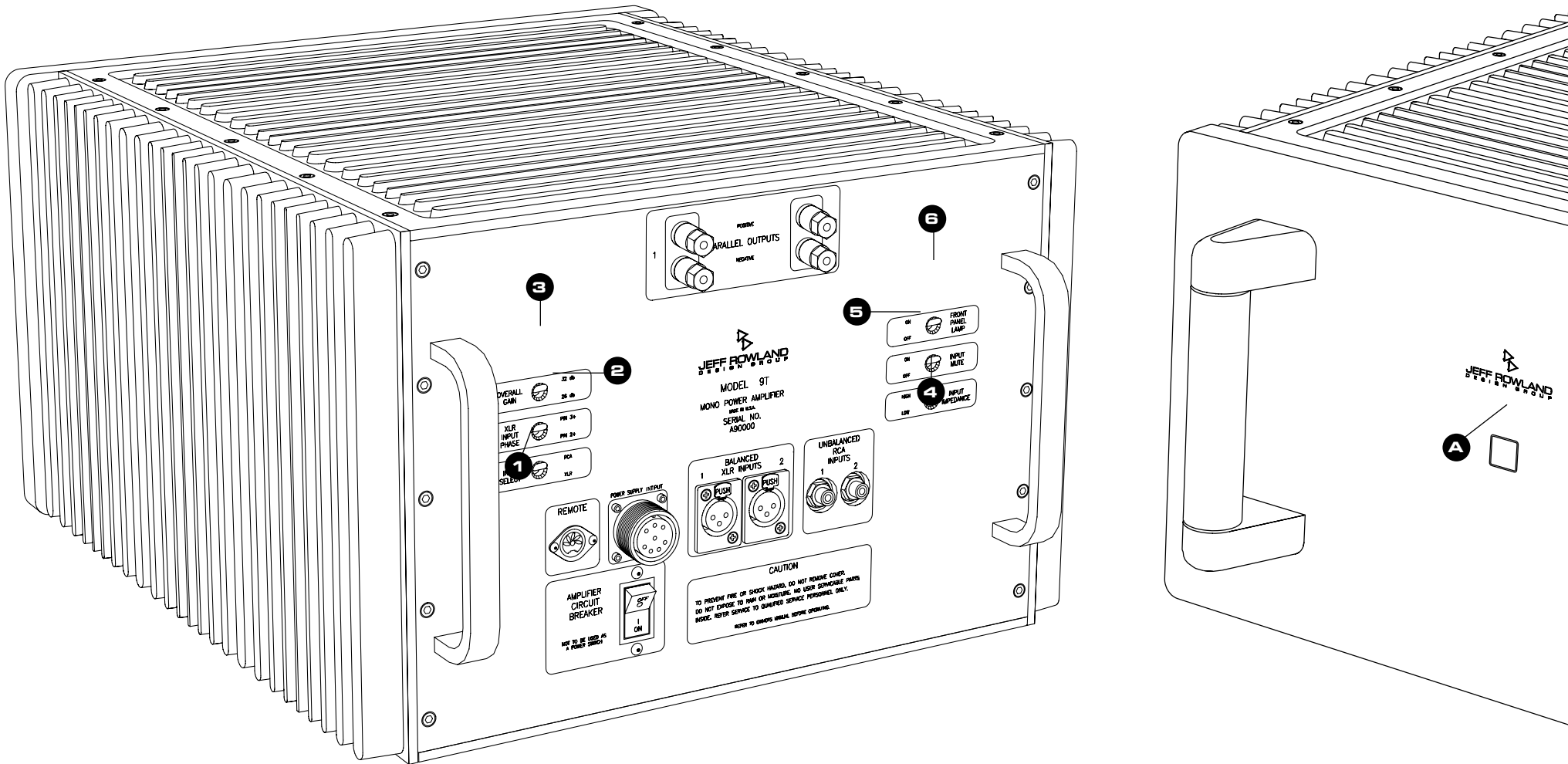
We strongly suggest that you save all packing materials. If the Amplifier is returned to your dealer or Jeff Rowland Design Group, the original packing materials must be used for shipment. Neither Jeff Rowland Design Group nor the shipper can be held responsible for damages incurred during transit if the original factory packing is not used. All factory returns require that a Return Authorization number be issued by Jeff Rowland Design Group prior to shipment.

Contents

Ensure that all of the auxiliary components listed below are enclosed within the four accessory boxes. Please note that an accessory box has been provided for each Amplifier chassis and companion Power Supply chassis for a total of four accessory boxes. Refer to the diagrams illustrated above and verify the components included.

- 1** Sixteen (16) compliant isolation interface supports
- 2** Two (2) AC power cables
- 3** One (1) speaker terminal hand wrench (7/16 inch)
- 4** Two (2) DC power cables
- 5** Sixteen (16) spiked coupling interface supports
- 6** One (1) warranty card (in some countries warranties are provided by the respective importer)

Front & Rear Panel Function Controls



Front & Rear Panel Function Controls

Before attempting any system interconnection, please familiarize yourself with the front and rear panel controls of the Model 9T/Ti Amplifier. The descriptions below refer to the numbers and letters associated with the features in the diagram above.

Front Panel

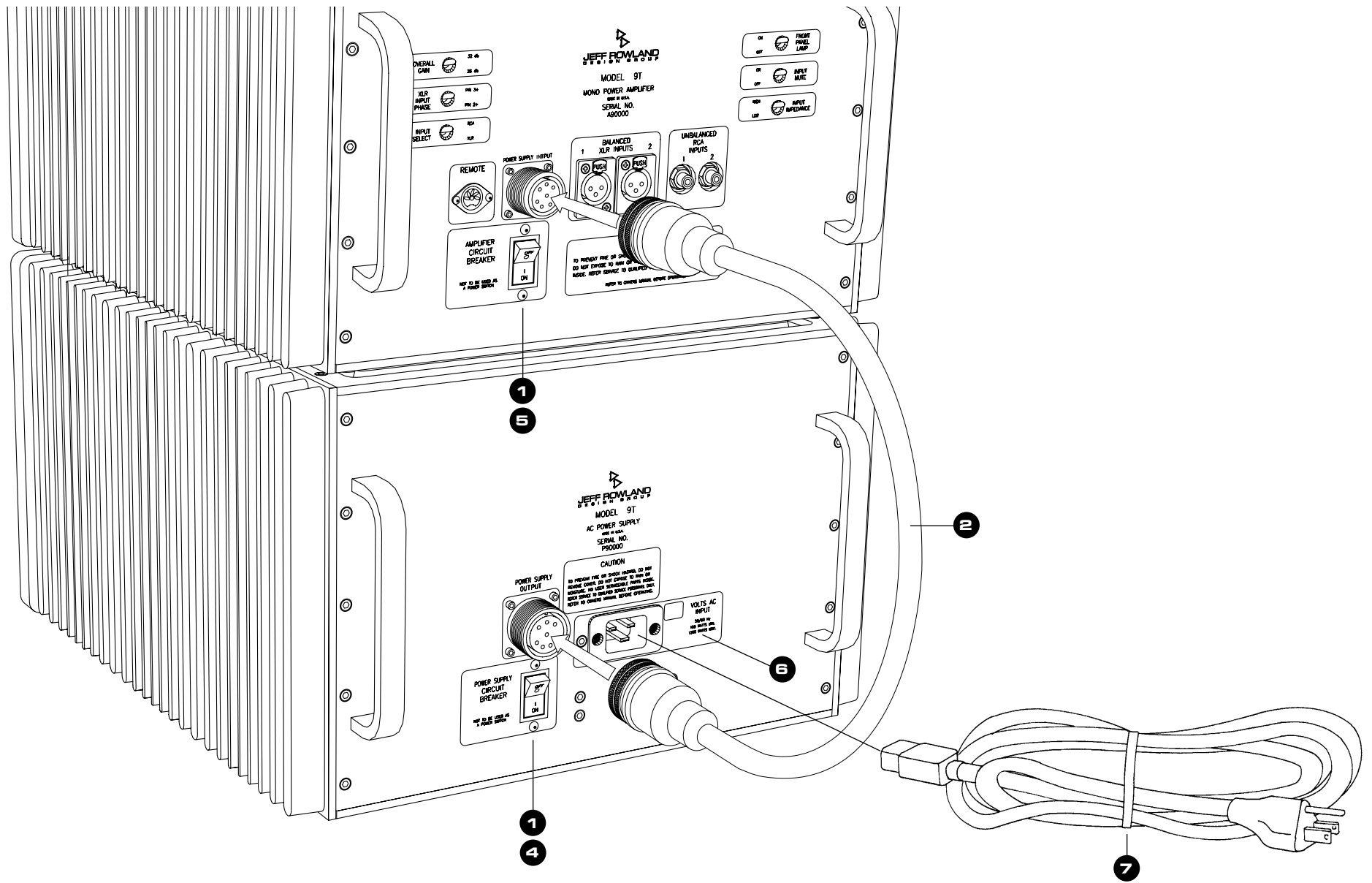
A FRONT PANEL STANDBY/POWER button: Press to operate Amplifier. Press again to place Amplifier in standby mode. This button will illuminate when the Amplifier is operational. When the button is not illuminated, all Amplifier inputs are muted and internal circuitry is reverted to power-saving (standby) mode. Note: All ON/OFF power switching should be initiated ONLY with this button. Anomalous operating conditions will automatically switch the Amplifier off (no illumination) and will prevent the Amplifier from being switched back on again until such a condition is eliminated.

Rear Panel

(Note: All of the switches described below can be switched, if desired, while the Amplifier is operational and playing music.)

- 1** INPUT SELECT switch: This switch selects either the RCA single-ended inputs or the XLR balanced inputs. Note: When the RCA position is selected, pin 2 of the XLR input is shorted to pin 1.
- 2** XLR INPUT PHASE switch: This switch selects between two XLR connector standards in use worldwide. The XLR standard of associated equipment should be noted and matched with the Model 9T/Ti to achieve correct absolute phase. The Amplifier is non-inverting with respect to XLR Pin 3 when the switch is in the upper position. Furthermore, the Amplifier is non-inverting with respect to XLR Pin 2 when the switch is in the lower position. Regardless of the standard selected, this switch can be used to conveniently reverse the absolute phase of the entire audio system when XLR balanced inputs are used. Note: The XLR standard used worldwide assigns Pin 1 to ground or input interconnect shield potential.
- 3** OVERALL GAIN switch: This switch selects between a high (32 dB) or normal (26 dB) overall gain structure of the Amplifier.
- 4** INPUT IMPEDANCE switch: This switch selects between a high (36k) or low (600 ohms) input impedance when using either the XLR or unbalanced RCA input jacks.
- 5** INPUT MUTE switch: This switch removes the internal input signal connection from the Amplifier input circuitry thus permitting input interconnect cables to be removed or inserted safely without switching the Amplifier off.
- 6** FRONT PANEL LAMP switch: When placed in the OFF position, this switch will cease front panel illumination during listening. Front panel indication of operational status is restored when the switch is returned to the ON position.

Rear Panel Power Connections



Installation

Locate the Amplifier as close as possible to its final installation point. Allow access to the rear panel for making connections.

The Model 9T/Ti Amplifiers and power supplies are convection cooled, eliminating the need for fan or forced air cooling. When operating, all chassis should have at least two (2) inches of air space around the heatsink areas. The chassis can be stacked vertically thus facilitating an upward flow of warm air currents throughout the vertical heatsink fin areas. This upward flow must not be impeded or recirculated around the chassis if proper cooling is to be maintained.

Supplied with your Model 9T/Ti Amplifiers are two different support systems. An assessment of the supporting structure should be made to determine the proper system for the Amplifiers. Both spiked and compliant interface supports can be easily installed within the indentations on each of the four chassis pods located underneath the corners of each Amplifier and Power Supply chassis. These system options permit the coupling or decoupling of the Amplifier and Power Supply chassis to the supporting structure.

As a general rule, most installations allow the Amplifier chassis to be rigidly coupled to the supporting structure via the spiked coupling interface supports. In carpeted installations, these supports provide excellent coupling from the Amplifier chassis to the rigid supporting structure below. In installations where the integrity of the supporting structure is poor, the Amplifier chassis can be loosely coupled to the supporting structure via the compliant isolation interface supports. This will help attenuate the transfer of spurious energy from the supporting structure into the Amplifier chassis.

Another installation option permits the Power Supply chassis to provide additional structural integrity and support for the Amplifier chassis. In this configuration, the Power Supply chassis is rigidly coupled to the supporting structure via the spiked coupling interface supports and the Amplifier is placed directly above the Power Supply and isolated via the compliant isolation interface supports. This installation procedure should be repeated with the other channel.

If desired, a coin may be placed directly under the point of the spiked coupling support to prevent damage to various surfaces (i.e. hardwood floors).

Installation / Rear Panel Power Connections

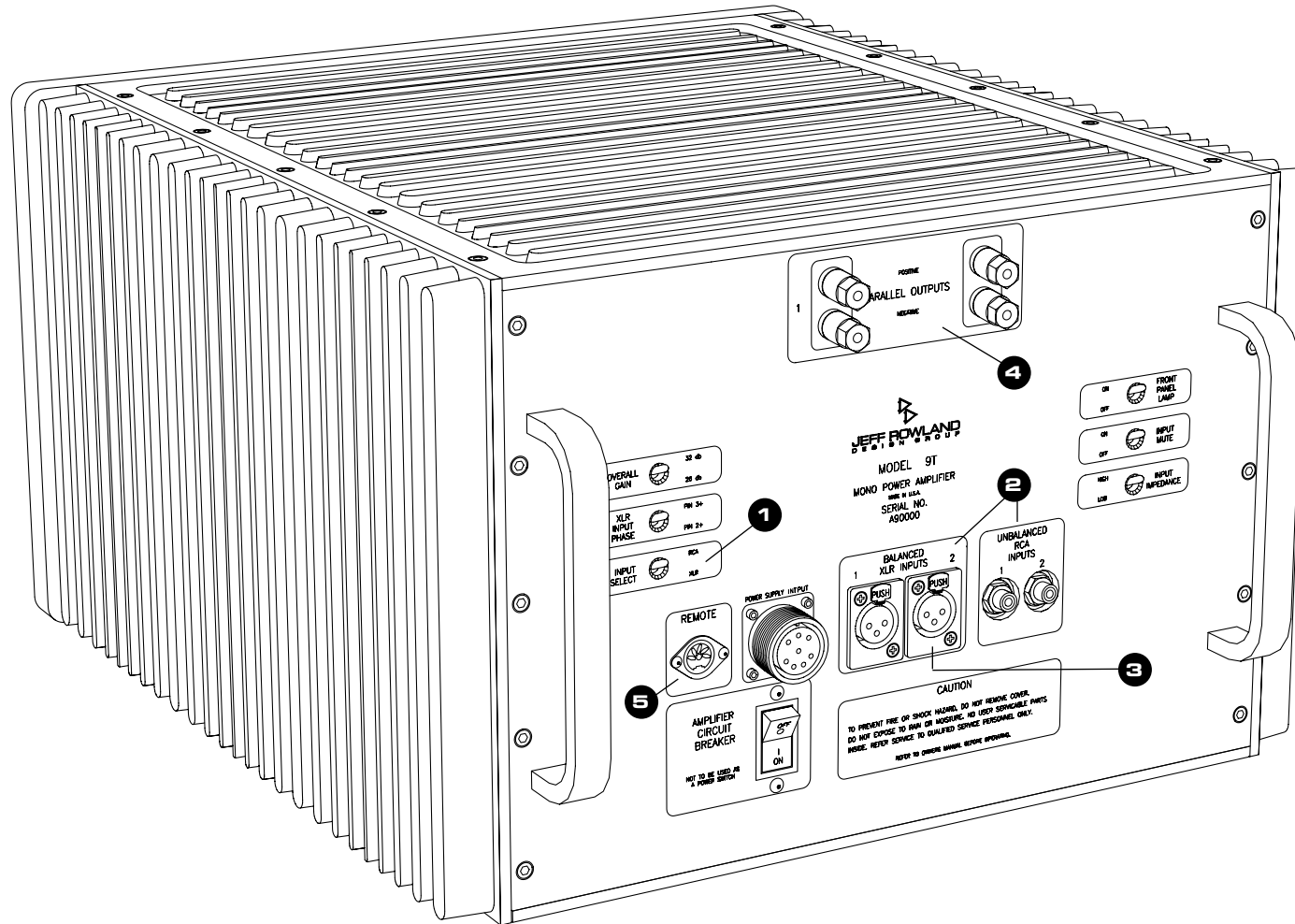
Rear Panel Power Connections

Important: Please strictly follow the steps as outlined below, in order, before operating your Model 9T/Ti Amplifiers. Failure to correctly follow these procedures may result in damage to DC power connectors and/or improper operation. Damage to DC power connectors is not covered under warranty.

- 1** Verify that the POWER SUPPLY CIRCUIT BREAKER and the AMPLIFIER CIRCUIT BREAKER are in the OFF position (green color not visible).
- 2** Locate and install the DC power cable between the Amplifier POWER SUPPLY INPUT connector and the Power Supply POWER SUPPLY OUTPUT connector. Note that this DC power cable must be connected before the AC power cable is connected.
- 3** Wait thirty (30) seconds for any residual Amplifier capacitor charge to be dissipated.
- 4** Switch POWER SUPPLY CIRCUIT BREAKER to the ON position (green color visible).
- 5** Switch AMPLIFIER CIRCUIT BREAKER to the ON position (green color visible).
- 6** Verify that the VOLTS AC INPUT identified on the Power Supply rear panel corresponds to the AC mains voltage of your service area.
- 7** Install the AC power cable between the Power Supply and an active AC mains outlet.
- 8** Repeat steps 1-7 for the other channel.

Note: If the Amplifier is moved to another location, first remove the AC power cable from the AC mains wall outlet, then return both Amplifier and Power Supply circuit breakers to their OFF positions and repeat the above procedure when reconnecting. It is not recommended to use the POWER SUPPLY CIRCUIT BREAKER to remove or connect AC mains power. Simply disconnect the AC power cable from the AC mains outlet.

Signal Connections



Signal Connections

The Model 9T/Ti Amplifier offers unprecedented compatibility with associated audio components. When connecting or disconnecting speaker or interconnect cables, it is only necessary that the INPUT MUTE switch be in the ON position if the Amplifier is already in operational mode.

- 1** Position INPUT SELECT switch to XLR if you are using XLR balanced interconnects or to RCA if you are using RCA unbalanced interconnects from your preamplifier or other source component.
- 2** Select one input — either BALANCED XLR INPUTS 1 or 2 or UNBALANCED RCA INPUTS 1 or 2 — to match your interconnect cable used. (Inputs 1 and 2 of either respective inputs are electrically identical.)
- 3** A slight click may be heard when the XLR interconnect plugs are installed correctly and latched. The latch (located on the input connector and labeled PUSH) must be pressed to remove the XLR interconnect cable.
- 4** Unscrew one set of the PARALLEL OUTPUTS connectors and install the positive and negative loudspeaker cable spade terminals to the respective Amplifier PARALLEL OUTPUTS. Red is normally positive; black is normally negative. Since both PARALLEL OUTPUTS 1 and 2 are electrically identical, the extra set can be used in loudspeaker bi-wire configurations. ALWAYS USE THE SUPPLIED SPEAKER TERMINAL HAND WRENCH WHEN CONNECTING OR DISCONNECTING LOUDSPEAKER CABLES. DO NOT OVERTIGHTEN THESE TERMINALS.



WARNING: Both positive and negative PARALLEL OUTPUTS are electrically active with respect to chassis and/or system ground potential. It is important that both of these outputs are electrically isolated from system ground potential. This precludes the use of this Amplifier in certain loudspeaker switching configurations (sometimes used in retail demonstrations) and testing or servicing situations where either positive or negative outputs can be connected to ground potentials. Failure to observe these precautions may result in damage to the Amplifier and may void your warranty. Consult the factory first if the Amplifier is to be used under these conditions.

Remote

- 5** A REMOTE connector (DIN 5-pin) is provided on the rear panel for remotely switching the Amplifier between operational and standby modes. The pin connections on this connector parallel the electrical contacts of the FRONT PANEL STANDBY/POWER button and lamp. An optional wired remote switch or infrared wireless remote sensor can be plugged into the REMOTE connector to facilitate this function. Contact your dealer or Jeff Rowland Design Group for further information and availability of this feature.

Operation

After following the procedures outlined in the Installation/Rear Panel Power Connections and Signal Connections sections, the Amplifier can be turned on by pressing the FRONT PANEL STANDBY/POWER button. Allow approximately twenty (20) minutes for the amplifier to reach operating temperature and maximum performance potential. A short warm-up time is dependent upon the amplifier being plugged in to an active AC mains power source for at least two hours prior to activating the FRONT PANEL STANDBY/POWER button. Therefore, it is recommended that the Amplifier be continuously connected to an active AC mains power source.

If you desire to disconnect the AC mains for an extended period of time and the DC power cable remains connected, simply disconnect the AC power cable from the wall outlet and reconnect upon your return. It is not required that the steps 1-8 outlined in the Installation/Rear Panel Power Connections section be observed if the DC power cable remains connected. Slight transients may be heard in the loudspeakers during the AC mains connect/disconnect transitions.

Your new Model 9T/Ti Amplifiers will require an initial break-in period of at least eighty (80) hours before maximum performance can be expected. Efficient break-in procedures require the Amplifier to be fully operational (playing music). Continuous and noticeable performance improvements will occur during subsequent months of operation.

The Model 9T/Ti is provided with a user-selectable input impedance switch. Under normal operating conditions, the high input impedance option should be used. Always use the high input impedance option when tube type preamplifiers, high impedance, or capacitor coupled signal sources are connected to the Model 9T/Ti input jacks.

The low impedance input jacks may be used when the signal source is direct coupled and capable of driving a low (600 ohm) impedance. There may be noticeable sonic benefits when a low impedance configuration is used due to the electrical termination of the interconnect cable. The results will vary due to variables in interconnect cable characteristics such as impedance, geometry, construction materials, etc. However, the final judgement of musicality must be empirically determined when using this feature within the conditions defined above.

Due to different sensitivities of associated equipment used with the Model 9T/Ti, the OVERALL GAIN switch can be used to optimize the total gain structure of the entire system. This allows the volume control of your preamp to be used in an ideal mid-range position.

Model 9T/Ti Performance Specifications

Output Power @ 8 ohms @ 4 ohms	Continuous RMS watts 350 watts 700 watts	Input Mute	User selectable on rear panel
Power Bandwidth	0.1 Hz to 160 kHz, -3 dB	Power Consumption (per channel)	100 watts standby; 300 watts operating, idle; 1200 watts maximum
Slew Rate	80 volts per microsecond	Inputs Unbalanced Balanced	User selectable on rear panel 2 RCA connector 2 XLR connector
THD and Noise	Within audio bandwidth Less than 0.06% at rated power	Outputs	2 pair binding posts
Damping Factor	Greater than 300, 20 Hz to 20 kHz, 8 ohms	Dimensions Power Supply (per channel)	17.5 in. (W) x 22 in. (D) x 11.4 in. (H) 44.5 cm (W) x 56 cm (D) x 28.5 cm (H)
Output Current	70 amps continuous 140 amps peak	Power Amplifier (per channel)	17.5 in. (W) x 22 in. (D) x 11.4 in. (H) 44.5 cm (W) x 56 cm (D) x 28.5 cm (H)
Overall Gain & Sensitivity (1 watt, 8 ohms)	User selectable on rear panel 26 dB or 32 dB; 141 mV or 71 mV	Shipping Dimensions Power Supply (per channel)	18.0 in. (W) x 24.0 in. (D) x 28.0 in. (H) 45.7 cm (W) x 61 cm (D) x 71.1 cm (H)
Input Impedance Unbalanced Balanced	User selectable on rear panel 36k or 600 ohms 36k or 600 ohms	Power Amplifier (per channel)	18.0 in. (W) x 24.0 in. (D) x 28.0 in. (H) 45.7 cm (W) x 61 cm (D) x 71.1 cm (H)
Common Mode Rejection Ratio	Greater than 60 dB, 20 Hz to 20 kHz	Weight Power Supply (per channel) Power Amplifier (per channel)	128 lbs. (58 kg) 92 lbs. (42 kg)
Absolute Phase Unbalanced input Balanced input	User selectable on rear panel Normal Normal or Phase-inverted	Shipping Weight Power Supply (per channel) Power Amplifier (per channel)	168 lbs. (76 kg) 132 lbs. (60 kg)

Because Jeff Rowland Design Group is constantly analyzing new design improvements, we reserve the right to change or modify product specifications without notice or obligation.

Basic Troubleshooting

A summary of fault conditions, their causes and remedies, are listed below.

The Model 9T/Ti Amplifier can produce high power levels which, without well designed protection circuitry, could damage loudspeakers. Therefore, most fault conditions which may occur during use will be indicated by the Model 9T/Ti reverting to a standby condition.

JRDG = Jeff Rowland Design Group, Inc.

Condition	Cause	Remedy
FRONT PANEL STANDBY/POWER button lamp does not illuminate after pressing, although the Amplifier operates normally.	Light bulb defective.	Remove STANDBY/POWER button from front panel and replace bulb located under button. Use replacement bulb kit and instructions supplied by JRDG.
	FRONT PANEL LAMP switch (rear panel) in OFF position.	Change switch position.
FRONT PANEL STANDBY/POWER button lamp does not illuminate after pressing, and Amplifier does not operate normally.	Incorrect power connections or circuit breaker positions on Amplifier and/or Power Supply rear panels.	Review Installation/Rear Panel Power Connections section.
	Abnormal operation of Model 9T/Ti Amplifier internal circuitry.	Consult dealer or JRDG.
FRONT PANEL STANDBY/POWER button reverts to standby condition during listening but can be returned to operational condition.	Excessive sub-sonic signals produced by source components.	Repair or replace source component (preamplifier). Identify and correct abnormal conditions such as low frequency rumble and/or acoustic feedback caused by phono playback components (if applicable).
	Severe clipping of Amplifier circuitry under intermittent overload conditions.	Reduce volume slightly or use higher efficiency loudspeakers.

Condition	Cause	Remedy
AMPLIFIER CIRCUIT BREAKER (rear panel) switches off occasionally during listening.	Excessive load currents drawn by loudspeaker(s) and/or excessive low-frequency program material.	Reduce volume slightly or use higher efficiency loudspeakers. Add subwoofer loudspeaker system to relieve load on main system.
	Intermittent short-circuit on Amplifier PARALLEL OUTPUTS.	Check loudspeaker cable and associated connections.
AMPLIFIER CIRCUIT BREAKER (rear panel) cannot be switched on (when loudspeakers are not connected).	Abnormal operation of Model 9T/Ti Amplifier internal circuitry.	Consult dealer or JRDG.
POWER SUPPLY CIRCUIT BREAKER (rear panel) switches off or will not remain on.	AC mains service voltage too high for Power Supply.	Reconfigure Power Supply to proper AC mains voltage operation. Consult dealer or JRDG.
	Abnormal operation of Power Supply internal circuitry.	Consult dealer or JRDG.
50/60 Hz hum noise in loudspeakers.	Sensitive source component(s) located too close to Power Supply.	Reorient or increase distance between source component and Power Supply.
50/60 Hz buzz noise in loudspeakers.	Ground loop condition created between components in system.	Break ground loop by lifting (electrically disconnecting) ground connection from AC mains power cord. (For safety purposes, chassis ground is still maintained through input interconnect shield when Amplifier INPUTS are connected.)
		Use balanced input system configuration (if applicable).
High frequency, random or scratching noise in loudspeakers.	Unstable conditions created by excessive capacitance in loudspeaker cables.	Insert compensation network on Amplifier PARALLEL OUTPUTS connector(s) (available from JRDG).

If you have any additional questions regarding installation or operation,
please contact your authorized Jeff Rowland Design Group Dealer.

