

**the
t.amp**

**THE T. AMP POWER AMPLIFIER
OWNER'S MANUAL**



TA SERIES

TA450

TA600

TA1050

TA1400

TA2400

PROFESSIONAL POWER AMPLIFIER - MK-X

OWNER'S MANUAL

The information furnished in this manual does not include all of the details of design, production, or variations of the equipment. Not does it cover every possible situation that may arise during installation, operation or maintenance. If you need special assistance beyond the scope of this manual, please contact our Technical Support Group.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO PREVENT ELECTRIC SHOCK DO NOT REMOVE COVER OR BACK. NO USER SERVICEABLE PARTS INSIDE REFERS SERVICING TO QUALIFIED SERVICE PERSONNEL.

MAGNETIC FIELD

CAUTION! Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below the unit. Because this amplifier has a high power density, it has a strong magnetic field, which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit.

If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the preamplifier or other sensitive equipment at the top.

WATCH FOR THESE SYMBOLS:



The lightning bolt triangle is used to alert the user to risk of electric shock



The exclamation point triangle is used to alert the user to important operating or maintenance instructions.



WARNING

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE!

Introduction

Your choice of this product indicates that you are a devotee to excellence in sound reproduction. We appreciate your patronage and take pride in the long tradition of quality components that our company represents.

So that you can get the most out of your unit, we suggest that you take the time to read through this manual before you look up and operate your system. This will acquaint you with operating features and system connection considerations so that your listening pleasure will be enhanced right from the start.

You will notice that in all aspects of planning, engineering, styling, operating convenience and adopt ability we have sought to anticipate your needs and desires.

Keep this manual handy for future reference.

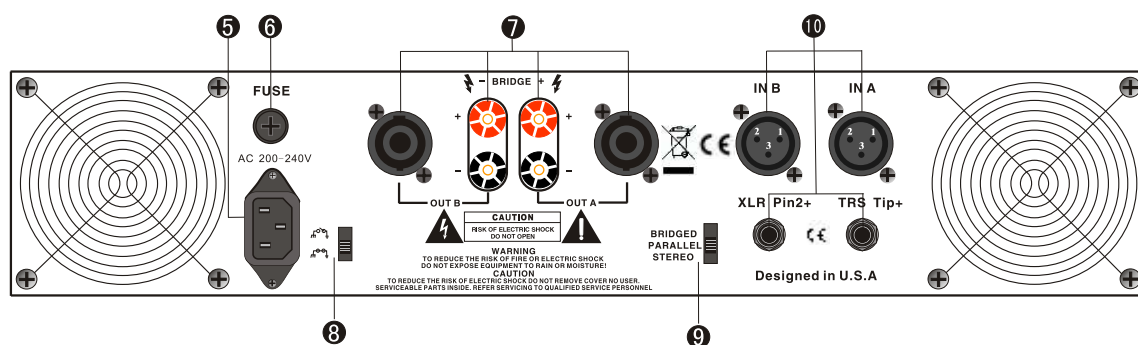
Record the serial number, found on the back of the unit, in the spaces designated on the warranty card, and in the space provided below. Refer to the model and serial numbers whenever you call upon your dealer for information or service on this product.

Model _____ Serial Number _____

FOR YOUR SAFETY, READ THE SECTIONS ON IMPORTANT PRECAUTIONS, AS WELL AS INPUT, OUTPUT, AND POWER CONNECTIONS.



- ❶ Front panel channel PROTECT. CLIP SIGNAL. POWER. LEADS.
- ❷ Combination circuit Breaker/power switch.
- ❸ Air in take Grill.
- ❹ Channel Attenuators.



- ❺ Power Cord..
- ❻ Power Fuse..
- ❼ Five - way Binding post output connectors
- ❽ Signal Ground Lift Barrier strip.
- ❾ Bridged/Parallel/Stereo
- ❿ Balanced phone Jack inputs..

Installation and Operation

Unpacking

Carefully open the shipping carton and check for any noticeable damage. Every THE T. AMP amplifier is completely tested and inspected before leaving the factory and should arrive in perfect condition. If you find any damage, notify the shipping company immediately. Only the consignee may institute a claim with the carrier for damage incurred during shipping. Be sure to save the carton and all packing materials for the carrier's inspection. It is a good idea to save the carton and packing material even if the amplifier has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.

Mounting

The power amplifier will mount in standard 19-inch racks having sufficient depth. The THE T. AMP is three rack spaces high- Four front panel mounting holes are provided. Rear mounting ears are also provided for additional support, which is essential in non-permanent installations like mobile or touring sound systems, but recommended for permanent installations as well. Because of the cables and connectors on the rear panel, a right angle or offset screwdriver or hex key will make it easier to fasten the rear mounting ears to the rails.

Important precautions

- ❑ Keep this owner's Manual for future reference.
- ❑ Follow all instructions printed on the unit chassis for proper operation.
- ❑ Do not spill water or other liquids into or on the unit. Do not operate the unit while standing in liquid.
- ❑ Make sure the power outlet conforms to the power requirements listed on the back of the unit.

- Do not block fan intake or exhaust ports. Do not operate the amplifier on a surface, which may impede the normal flow of air around the unit such as a bed, sofa, rug or similar surface.
- Do not use this unit if the electrical power cord is frayed or broken.
- Always operate the unit with the AC ground wire connected to the electrical system ground.
- Do not drive the inputs with a voltage greater than that required to drive the amplifier to full output
- Do not run the output of any amplifier channel back into another channels input.
- Do not parallel or series connect an amplifier output with any other amplifier output.
- Do not connect the output of the amplifier to any other voltage source, regardless of whether the amplifiers turned on or off.
- Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.
- Do not ground any red terminal

Operating Precautions

Make sure the AC mains voltage is the same as that printed on the rear of the amplifier. Damage caused by connecting the amplifier to improper AC voltage is not covered by THE T. AMP warranty. Make sure the power switch is off before making system connections or plugging.

It is always a good idea to have the gain controls turned down during power-up to prevent speaker damage if there is a high signal level at the inputs.

Always use good quality power outlet, and make sure it meets the power requirements. Low quality power outlet, such as oxidized spring blades in the outlet or too small cable connected to the outlet, etc, will have an adverse effect on the performance of the amplifier.

Use proper speaker cables to minimize the power loss in the cables. When connecting bare wire to the red binding post, so it is better to use spade lugs to connect speaker system.

Use good quality shielded input cables and XLR plugs, along with good soldering technique, to ensure trouble free reliability.

Connection Input

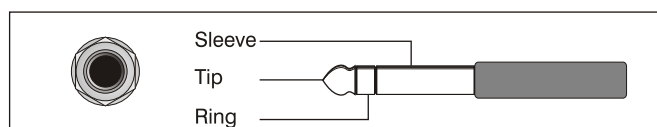
The balanced phone jack inputs have a nominal impedance of 20K ohms (10K ohms with unbalanced wiring) and will accept the line level output of most devices. Three-pin female XLR connectors are also available on the optional accessory and balanced barrier block connectors are available on the optional accessory correct in put wiring will depend on two factors : (1) whether the input signals are balanced or unbalanced, and (2) whether the signal source floats or has ground reference. Figures provide examples of recommended connection techniques for each type of signal source. The optional connector is shown.

The amplifier's built-in 1/4-inch input phone connectors can be wired similarly for balanced or unbalanced, floating or ground- referenced sources.

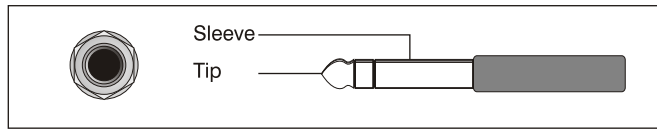
The phone connectors have a standard tip ring sleeve (TRS) configuration: the tip is positive (+), ring is negative (-) and sleeve is ground, wiring for different sources follows the XLR wiring guidelines shown.

a) JACK- INPUTS Balanced Signals

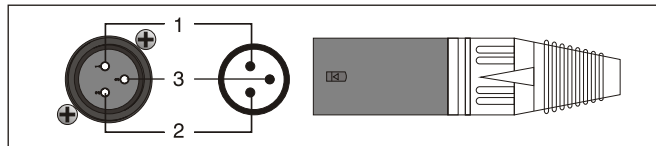
Tip- HOT (caldo) Ring- COLD (freddo) Sleeve- Ground (gud)



b)JACK INPUTS Unbalanced Signals
 Tip- HOT(cai do) Sleeve- Ground (gud)



c)XLR INPUTS Balanced Signals
 Pin1 Ground (gud) Pin2 HOT Pin3 COLD



Connecting Outputs

Speakers can be connected using banana plugs, sade lugs, or bare wire to the binding posts on the rear panel of the amplifier. Consult the Wire Gauge Chart to determine suitable wire gauges for different load impedances and cable lengths.

The red binding posts are considered "hot", connecting to the positive poles of speakers, while the black binding posts are at signal ground, connecting to the negative poles of speakers.



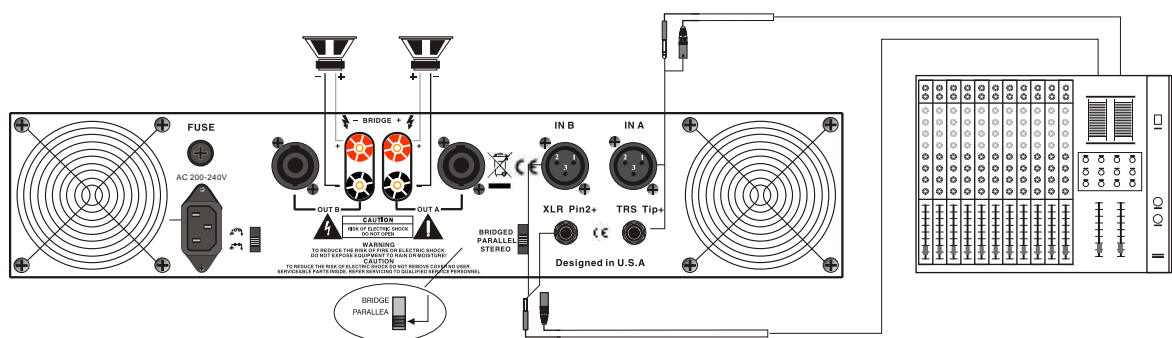
Never connect a "hot "(red) output to ground or to another "hot"(red) outputs! Always turn off the amplifier before making connections!

Connecting Power

While the actual current draw an amplifier demands from the AC mains depends on many factors (including its load, output level, and the crest factor of its program material). The THE T. AMP power requirement is rated under typical music conditions, with both channels driven so those peaks are just at the clipping point. Maximum current draw for each amplifier is listed in the Specifications section. There are no user - service - able parts inside the amplifier, and removing its top cover can expose dangerous voltages and shock hazards.

Stereo Operation

For stereo (dual channel) operation, set the mode select switch to the "stereo" position, in this mode, both channels operate independently of each other, with their input attenuates controlling their respective levels. Thus, a signal at Channel A's input produce an amplified signal at channel A's output, while a signal at Channel B's input produces an amplified signal at Channel B's output.

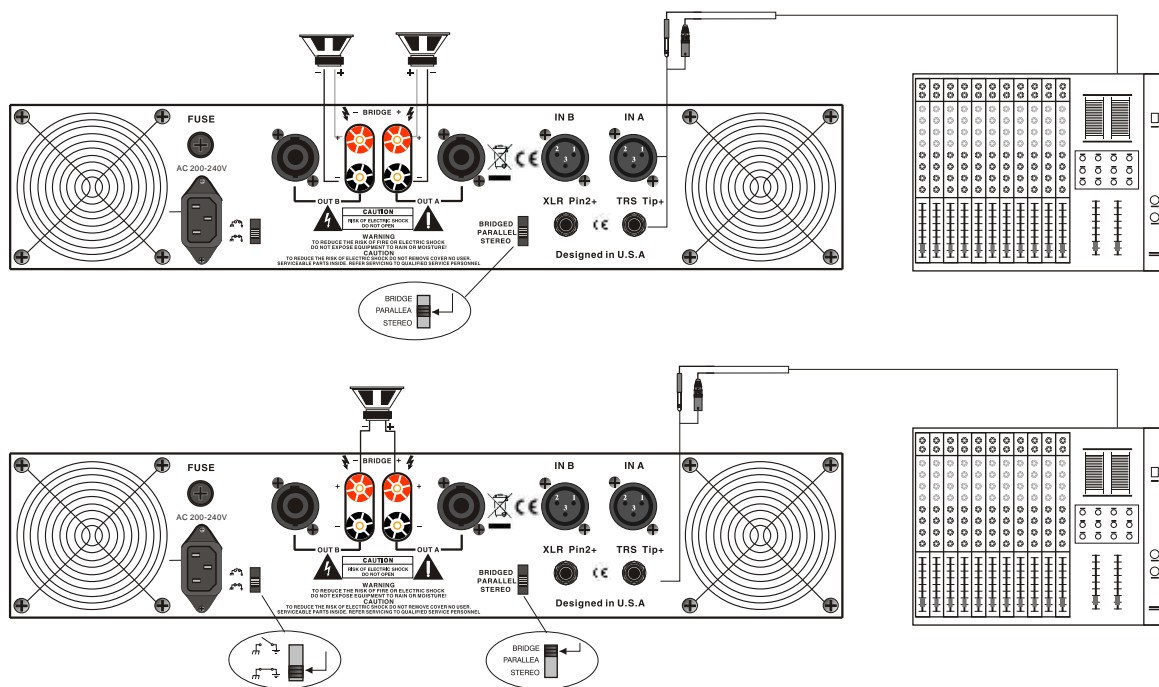


Bridged Mono Operation

Both amplifier channels can be bridged together to make a very powerful single channel monaural amplifier. When the mode switch is set to the "bridge" position. One channel "pushes", while the other "pulls" equally, effectively doubling the power over that of either channel alone. Use extreme caution when operating the amplifier in the bridged mode.

To bridge the amplifier, set the mode switch to the "bridge" position. Apply the signal to Channel A's input and connect the speakers across the "hot" outputs - the red binding posts - of Channels A and B. Channel B'S "hot" output is in phase with the input.

For operation, adjust only the Channel A's input attenuator while Channel B's will not function (Channel B's input signal has been disconnected).



Never connect a "hot " output to ground or to another "hot" outputs!

Bridging Precautions

Never ground either side of the speaker cable when the amplifier is in the bridged mode; both sides are "hot". If an output patch panel is used, all terminals must be isolated from each other and from the ground

Switches & Controls

AC Power Switch Circuit Breaker



Never try to hold the switch in the "ON" position if it won't stay there itself!

The THE T. AMP amplifiers have a combination AC switch/circuit breaker on the front panel. If the switch shuts off during normal use, push it back to the ON position once. If it will not stay on, the amplifier needs servicing Switches & controls.

Input Attenuators

Whenever possible, set attenuates fully clockwise to maintain optimum system headroom. The input attenuator controls (one for channel A, one for channel B) located at the front panel adjust gain for their, respective

amplifier channels in all modes. See the specifications at the end of this manual for standard voltage gain and input sensitivity information. When operating a THE T. AMP amplifier in the bridged mode, both attenuates must be in the same position so the speaker load will be equally shared between the channels. See the section on Bridged Mono Operation for more information and precautions on bridged - mode operation.

Mode Select Switch

The rear panel mode select switch determines whether the amplifier is in the stereo or bridged mono mode. Do not operate the mode select switch with the amplifier on. See the sections on Stereo Mode and Bridged Mono Mode for more information.

Signal Ground lift Jumper

In a properly designed system (for safety and to minimize noise), the amplifier should receive its ground from the line cord. Whenever possible, the signal source equipment should share the same AC ground as the amplifier(s). In some cases, however, this may result in a ground loop. If this happens, remove the ground lift jumper (supplied) on the rear barrier strip. This jumper electrically connects the signal ground to the chassis / AC ground. If the jumper is removed, the signal ground is lifted and completely isolated from the chassis/AC ground. Do not remove the jumper if the amplifier and the signal source equipment are not on the same AC ground.

Indicators

THE T. AMP features four front panel LED indicators per channel Clip, Signal, Protect, and Power. These LED indicators inform the user of each channel 's operating status and warn of possible abnormal conditions.

CLIP LED

A channel's red Clip LED will light dimly at the onset of clipping and increase in brilliance, as clipping becomes more severe, staying on until the clipping ceases. If the LED's are flashing quickly and intermittently , the channel is just at the clip threshold, while a steady, bright glow means the amp is clip limiting, or reducing gain to prevent severely clipped waveforms reaching the loudspeakers. For more information on clip limiting, see the section Clip Protection.

SIGNAL LED

This green LED lights when its channel produces an output signal of about 4 volts RMS or more (0.1 volt or more at the input, with 0 dB attenuation and standard $40\times$ voltage gain). It is useful in determining whether a signal is reaching and being amplified by the amplifier.

PROTECT LED

When lights the red PROTECT LED indicates that the channel has overheated, the channel's output relay is open, and the speaker(s) has been disconnected. The speaker(s)for any of following reasons:

- 1 The unit was just powered up and is in the turn - on delay mode.
- 2 The amplifier senses a DC voltage at its output.

POWER LED

This indicator lights when the amplifier has been turned on, AC power is available and the low-voltage power supply and fan are operational.

Input attenuates

The two input attenuator controls, located at the front panel, adjust gain for their respective amplifier channels

in the stereo mode. With attenuate fully clockwise at 0dB, professional power amplifiers have the rated power (when the rated input is 0.755v). In the bridged mode, only Channel A's attenuate controls the power level, while the Channel B's does not function.

Protection Features

Each THE T. AMP Professional power amplifier incorporates several circuits to protect both themselves the loudspeakers under virtually any situation. THE T. AMP has attempted to make the amplifier as "foolproof" as possible by making it impervious to short and open circuits, DC voltage, and overheating.

When a problem occurs that causes a channel to go into a protection mode, the PROTECT for that channel will glow. DC voltage on the output, excessive subsonic frequencies, or thermal overloads will cause the channel's output relay to disconnect the speaker load until the problem is corrected or the amplifier cools down.

The internal fan (s) will keep the amplifier operating well within its intended temperature range under all normal conditions.

When a channel's heat sink temperature reaches 90°C, which may indicate an obstructed air supply, clogged air filter, etc, the channel will disconnect its load. Normal operation will resume automatically once it cools to 80°C. During this time, the channel's PROTECT LED will light.

Short Circuit

If an output is shorted, the protection circuit will be more sensitive than in the normal protection situation and will protect the channel's output transistors from over current stress. The channel's PROTECT LED will light. If the short circuit remains, the channel will eventually thermally protect itself by disconnecting the load.

DC VOLTAGE PROTECTION

If an amplifier channel detects DC voltage at its output its output really will immediately open to prevent loudspeaker damage. The channels PROTECT LED will light.

Subsonic Frequencies

THE T. AMP professional power amplifiers each have a built-in subsonic frequency protection circuit, cornered at 10HZ, for each channel.

Addition THE T. AMP, special high frequency protection technology enables our amplifiers to automatically disconnect speakers when excessive high frequency energy appears at the output.

TURN-ON/ TURN-OFF Protection

At Power up speakers are disconnected, the power supplies charge for about 2 3 seconds and stabilize, the speakers are then connected. When power is removed, speaker loop is synchronized with the turn off signal, therefore no thumps or pops are heard.

Speaker Protection

All THE T. AMP professional power amplifiers automatically protect speakers from DC voltages, subsonic signals and excessive high frequency signals, but users are supposed to be aware of some application limits of the speakers.

Be aware that the All THE T. AMP amplifiers power does not exceed the speaker's power capabilities.

Amplifier Power Ratings and Specifications

Specification	TA450	TA600	TA1050	TA1400	TA2400
8 ohm Stereo Power (RMS)	125W x 2	200W x 2	350W x 2	450W x 2	650W x 2
4 ohm Stereo Power (RMS)	200W x 2	300W x 2	525W x 2	700W x 2	1200W x 2
8 ohm Bridged Power (RMS)	300W	450W	800W	1200W	2000W
Frequency response	20Hz – 20kHz: + 0.1./– .3dB(1W/8Ω)				
THD into 4Ω, 1kHz	<0.05% @200W	<0.05% @ 300W	<0.05% @525W	<0.05% @700W	<0.05% @1200W
IMD-SMPTE	<0.01% @125W into (60Hz & 7kHz)	<0.01% @200W into (60Hz & 7kHz)	<0.01% @350W into (60Hz & 7kHz)	<0.01% @450W into (60Hz & 7kHz)	<0.01% @650W into (60Hz & 7kHz)
Slew Rate	40v/μs	40v/μs	40v/μs	40v/μs	60v/μs
Damping Factor	300:1,1kHz @ 8Ω	300:1,1kHz @ 8Ω	300:1,1kHz @ 8Ω	350:1,1kHz @ 8Ω	500:1,1kHz @ 8Ω
Input CMRR (@ 1kHz)	>60dB	>60dB	>60dB	>60dB	>60dB
Voltage Gain	50x standard	50x standard	50x standard	70x standard	91x standard
Input Sensitivity (@ 8Ω)	0.775V for rated power	0.775V for rated power	0.775V for rated power	0.775V for rated power	0.775V for rated power
Input Impedance	20K Ohms, balanced 10K Ohms, unbalanced	20K Ohms, balanced 10K Ohms, unbalanced	20K Ohms, balanced 10K Ohms, unbalanced	20K Ohms, balanced 10K Ohms, unbalanced	20K Ohms, balanced 10K Ohms, unbalanced
Signal to Noise	-103dB	-103dB	-103dB	-103dB	-103dB
Crosstalk	<60dB	<60dB	<60dB	<60dB	<60dB
Connectors (per channel)	Female XLR (pin2+), TRS(tip+), 5 - way output binbing posts				
Power Supply	200V-260V/50Hz-60Hz				
Max. Current Draw 230V	5A	6A	7A	8A	15A
Cooling	Two(2) variable speed DC fans				
Controls	2 front panel attenuators, rear panel signal ground lift jumper				
Indicators (per channel)	PROTECT LED, CLIP LED, SIGNAL LED, POWER LED.				
Protection	Temperature, DC, sub/ultra sonic short circuit, IGM, output				
Dimensions(H×W×D)	3.4" x 19" x 15" 8.8x 48.3 x 40cm	3.4" x 19" x 15" 8.8x 48.3 x 40cm	3.4" x 19" x 15" 8.8x 48.3 x 40cm	3.4" x 19" x 15" 8.8x 48.3 x 40cm	3.4" x 19" x 15" 8.8x 48.3 x 40cm
Gross Weight	17Kg	19Kg	21Kg	24Kg	26Kg
Net Weight	16Kg	18Kg	20Kg	23Kg	25Kg

NOTE:

THE T. AMP follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.