

# TAGA<sup>®</sup>

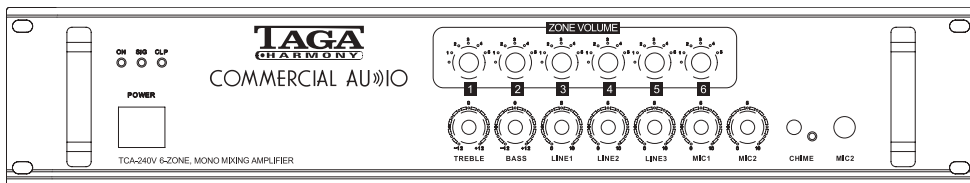
## CHARMONY

To Achieve Glorious Acoustics

# COMMERCIAL AU)))IO

## TCA Series

100V MULTIZONE MONO MIXING AMPLIFIERS



Instruction Manual

# Introduction

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Thank you for purchasing TAGA Harmony amplifier.

The TCA series amplifiers are perfect solution for commercial installations in restaurants, pubs, shops, conferencing rooms, fitness clubs for both background music playback and paging (voice announcement) systems.

This amplifier allows to build a cost-effective multi-zone installation and mix music from analog inputs with voice announcements.

A variety of features and wired connections makes this amplifier a very versatile device with ability to work in different applications:

- Multi-zone mono amplification for 100V speaker lines to deliver sound to many rooms (zones); with an independent volume level.
- Multiple analog LINE inputs mixing.
- Compatibility with low-impedance speakers (selected models).
- Microphone input(s) with mixing for voice paging and broadcasting.
- Microphone input with priority (selected models).
- Chime to notify that a voice announcement is to be broadcasted (selected models).
- Treble / Bass regulation (one for all zones).
- Mono output to connect additional power amplifier, subwoofer or powered speakers (selected models).
- Signal and overload indicators.
- Cooling fan allows long time operation.
- Screw-in Speaker Connectors.

## IMPORTANT REMARKS

Please read this instruction manual carefully before installation and keep it for future reference.

- This amplifier is intended for indoor use only.
- Because the 70V/100V technology requires adequate technical knowledge we recommend having a licensed professional engineer or designer reviewed the design and installation of the system focusing on safety and performance of the application.
- Model name coding TCA-###V.

◇ **TCA** - is the series name

◇ **###** - is a number representing amplifier total output power in watts

◇ **V** – means high voltage technology

For instance: TCA-240V is a high-voltage amplifier with the total output power of 240 watts.

- This amplifier is equipped in a ventilation fan which can generate noise – this is normal operation.
- When switching on and off your audio equipment, turn down the volume to avoid strong electrical impact to be delivered to the speaker.

## Cleaning

Do not use strong or abrasive cleaners. Use a dry, soft cloth for cleaning.

## Specifications

Full technical specifications are available on the [www.tagaharmony.com](http://www.tagaharmony.com) website.

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# Safety Instructions

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## IMPORTANT

READ THIS SECTION CAREFULLY BEFORE PROCEEDING!



### CAUTION

**RISK OF ELECTRIC SHOCK  
DO NOT OPEN**



**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT REMOVE CHASSIS (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The triangle containing a lightning symbol is intended to alert the user to the presence of uninsulated dangerous voltages within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



An exclamation mark in a triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING:** TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE, AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.

**CAUTION:** TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

**CAUTION:** FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE THE FUSE ONLY WITH THE SAME AMPERAGE AND VOLTAGE TYPE. REFER REPLACEMENT TO QUALIFIED SERVICE PERSONNEL.

**WARNING:** UNIT MAY BECOME HOT. ALWAYS PROVIDE ADEQUATE VENTILATION TO ALLOW FOR COOLING. DO NOT PLACE NEAR A HEAT SOURCE, OR IN SPACES THAT CAN RESTRICT VENTILATION.

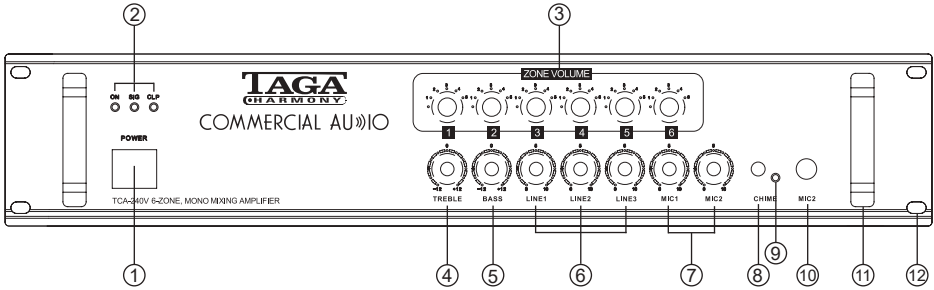
# Important Safety Instructions

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1. Read Instructions - All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Cleaning - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp, soft cloth for cleaning.
6. Water and Moisture - Do not use this product near water - for example, near a bath tub, wash bowl, kitchen sink or laundry tub; in a wet basement; or near a swimming pool; and the like.
7. Accessories - Do not place this product on an unstable cart, stand, tripod, bracket or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.
8. Ventilation - Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
9. Power Sources - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
10. Grounding and Polarization - This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
11. Power-Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
12. Lightning - For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable systems. This will prevent damage to the product due to lightning and power-line surges.
13. Overloading - Do not overload wall outlets, extensions cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
14. Object and Liquid Entry - Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Do not expose this apparatus to dripping or splashing, and ensure that no objects filled with water, such as vases, are placed on the apparatus.
15. Servicing - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
16. Damage Requiring Service - Unplug this product from wall outlet and refer servicing to qualified personnel under the following conditions:
  - When power supply cord or plug is damaged;
  - If liquid has been spilled, or objects have fallen into product;
  - If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will require extensive work by a qualified technician to restore the product to its normal operation;
  - If the product has been dropped or damaged in any way;
  - If the product exhibits a distinct change in performance - this indicates a need for service.
17. Replacement Parts - When replacement parts are required, be sure the technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
18. Safety Check - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
19. Wall or Ceiling Mounting - The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
20. Heat - The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.
21. [Refers to products equipped with vacuum tubes] Tube Cage - For your safety and to protect the vacuum tubes this product may be equipped with the factory installed vacuum tube cage. It is not recommended to remove the cage unless it is required to change the vacuum tubes. When the cage is removed - do not touch the vacuum tubes - they may be hot and burn the skin!

# Front and Rear Panel

TCA-240V model shown - available controls and inputs as well as their placement may vary depending on the model.

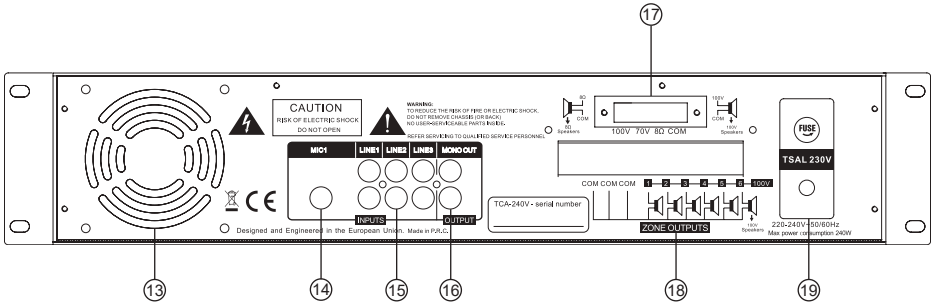


## Front panel

1. POWER Switch (1 – ON, 0 – OFF)
2. Status LED Indicators:
  - ON – Power Status
  - SIG – Signal Status
  - CLP – Clipping Status
3. ZONE VOLUME – Volume Regulators for each zone
4. TREBLE Regulator
5. BASS Regulator
6. LINE1 / LINE2 / LINE3 – Line Input Mixing Regulators
7. MIC1 / MIC2 – Mikrofon Mixing Regulators
8. CHIME – Voice Announcement Button
9. CHIME Status LED Indicator
10. MIC2 – Microphone number 2 Jack Input [6.3mm (1/4")]
11. Handle
12. Rack mount hole

# Front and Rear Panel

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## Rear panel

- 13. Ventilation fan
- 14. MIC1 - Microphone number 1 Jack Input [6.3mm (1/4")]
- 15. LINE1 / LINE2 / LINE3 – Analog RCA Inputs (both L/R channels are mixed together)
- 16. MONO OUT – Analog RCA Output in Mono
- 17. Additional Speaker Output – 100V, 70V or 8Ω (Screw-in Speaker Connectors)
- 18. ZONE OUTPUTS -100V Speaker Output (Screw-in Speaker Connectors)
- 19. Power Cable and Fuse Box

**Note!** A blown fuse should be only exchanged for exactly the same type as indicated on the rear amplifier panel. The Power Cable should be disconnected!

# Rack installation

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This amplifier is designed for installation in a 482mm (19") width rack unit as well as can be used as a tabletop amplifier.

In the rack the amplifier requires a space of 2 RS (2 rack spaces = 89mm).

- Hold the amplifier by the handles in position and secure it in the rack with the four mounting bolts (insert them in the rack mount holes).
- The mounting bolts alone may be not sufficient for fixing the amplifier safely. We recommend to use additional lateral rails or a bottom plate to secure the amplifier in the rack.

**Note!** To prevent the rack from becoming top-heavy insert the amplifier into the lower section of the rack.

**Note!** Make sure that the hot air is dissipated from the rack – otherwise you may damage the amplifier and/or other equipment installed in the rack – this will void your warranty.

# Speaker Connection

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The Speaker Connectors can accommodate up to 10AWG speaker cables. A 10AWG cable is recommended for longer connections (longer than 20 meters / 66 feet). For shorter lengths you can use 12/14 or 18 AWG cables. It is recommended to leave about 150 cm (5 feet) of extra cable at the amplifier end to facilitate positioning and installation of the amplifier. Do not use staples, nails or other metal objects to secure the cables. You will get the best sound quality and least amount of hum by keeping the cables away from other electrical wires and cables.

## **WARNING!**

- Before connecting the speaker make sure that the amplifier is switched off - otherwise you may damage the amplifier and/or the speakers and void your warranty.
- Avoid to short-circuit of cables – it may damage the amplifier and/or the speakers and void your warranty.

## **Connection modes**

This amplifier can be connected to 100V or 70V speakers [100V or 70V mode] or low-impedance speakers [low-impedance mode].

## **WARNING!**

Never connect 100V and 70V and low-impedance speakers simultaneously - it may damage the amplifier and/or the speakers and void your warranty. Connect and use only one type of speakers (100V or 70V or low-impedance speakers) at the same time.

## **100V or 70V mode – connection**

### **WARNING!**

- Make sure to use a 100V or 70V speaker for this mode - otherwise it may damage the amplifier and/or the speakers and void your warranty.
- Make sure that the total wattage of all connected speakers will not exceed the output power of this amplifier [check technical specifications on the [www.tagaharmony.com](http://www.tagaharmony.com) website] - otherwise you may damage the amplifier and/or the speakers and void your warranty.
- 70V connection is not available for the ZONE OUTPUTS.

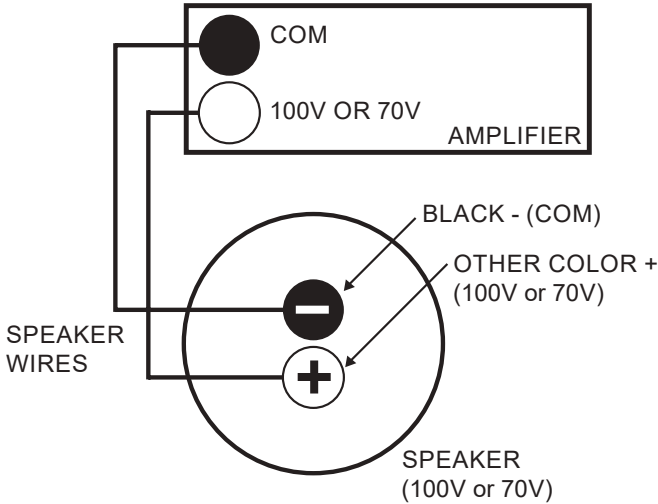
100V connection - using speaker cables connect 100V amplifier speaker connector to the 100V power input speaker terminal of your speaker (usually marked as 100V or in RED color or +) and COM amplifier speaker connector to the common input of your speaker (usually marked as COM or in BLACK color or -).

70V connection - using speaker cables connect 70V amplifier speaker connector to the 70V power input speaker terminal of your speaker (usually marked as 70V or in RED color) and COM amplifier speaker connector to the common input of your speaker (usually marked as COM or in BLACK color).



# Speaker Connection

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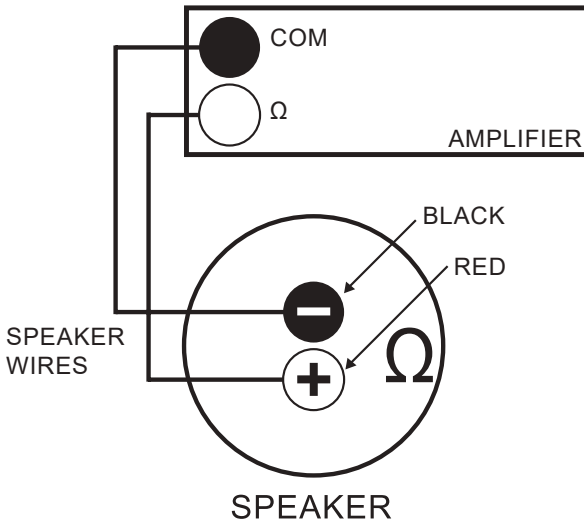


## Low-impedance mode – connection

**WARNING!** Make sure that your speaker is suitable to work and is compatible with the amplifier working impedance - otherwise you may damage the amplifier and/or the speakers and void your warranty.

The low-impedance output is marked with  $\Omega$  sign (usually 8 $\Omega$  or 6 $\Omega$  or 4 $\Omega$ ). Choose this output if you intend to use a low-impedance speaker.

Pay attention to connecting the polarity of the speaker wire terminals correctly with the amplifier speakers connectors (RED + in the speaker with the output marked with  $\Omega$  sign in the amplifier ; BLACK - in the speaker with the output marked with COM sign in the amplifier).



# Speaker Connection

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## Connection options

This amplifier offers two connection options for the speaker : Additional Speaker Output and Zone Outputs.

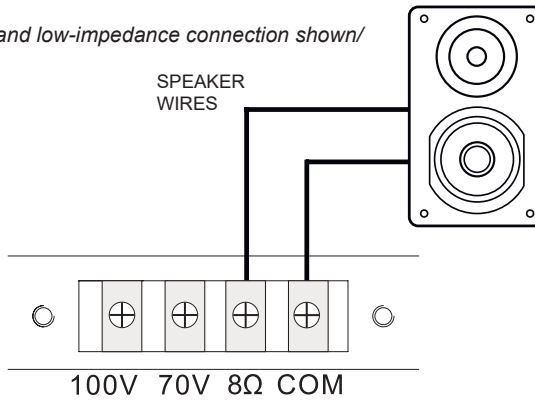
### WARNING!

- Never connect both connection options simultaneously - it may damage the amplifier and/or the speakers and void your warranty.
- Use only one option (Additional Speaker Output or Zone Outputs) at the same time.

### Additional Speaker Output

This output is used for a single zone for 100V or 70V or low-impedance speakers.

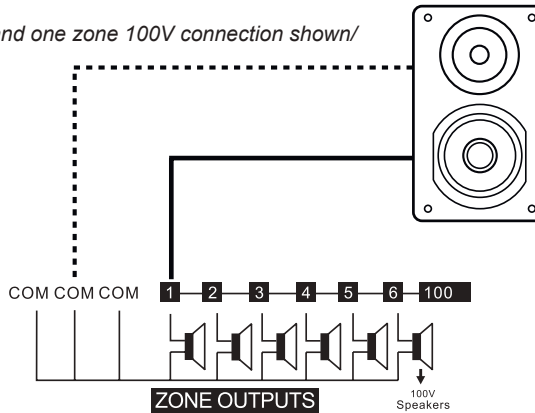
*/TCA-240V model and low-impedance connection shown/*



### Zone Outputs

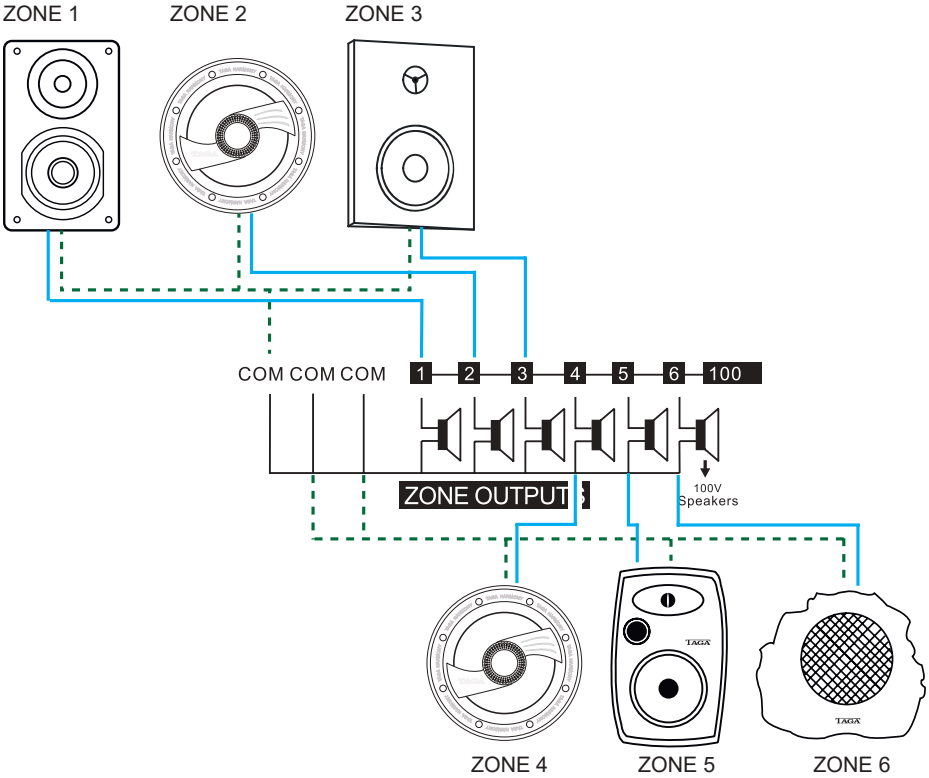
This output is used for multiple zones for 100V speakers. You can connect any combination of zones according to your application requirements.

*/TCA-240V model and one zone 100V connection shown/*



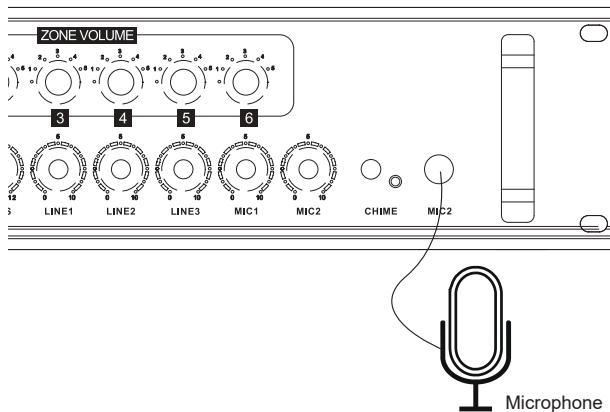
# Speaker Connection

*/TCA-240V model and 6-zone 100V connection shown/*

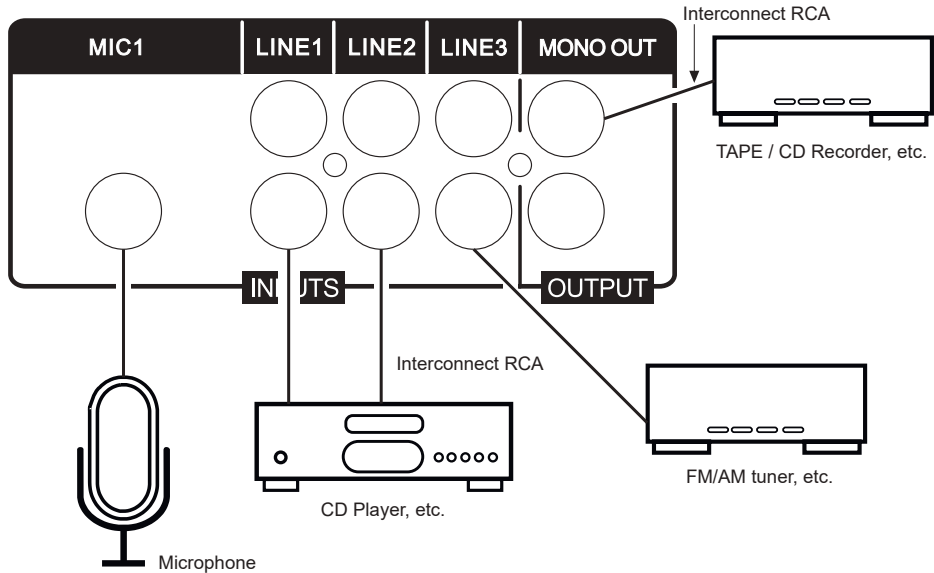


# Hooking up the Amplifier

TCA-240V model shown - available controls and inputs as well as their placement may vary depending on the model.



# Hooking up the Amplifier



1. Make sure the amplifier is turned off (the Power Switch in 0 and the Power Cable is removed from the power outlet).
2. Turn the Volume Regulator of each ZONE, LINE and MIC to MIN (max counter clockwise).
3. Using speaker cables (not supplied with this product) connect your speakers to the connectors located on the rear of the amplifier (check „Speaker connection” for more details).
4. Using RCA interconnect cables (not supplied with this product) connect analog audio source devices you want to play (CD player, satellite or FM tuner, video console etc.) to the Analog RCA Inputs (LINE) on the rear of the amplifier.
5. If you want to transfer audio signal from this amplifier to an external device (for example: a recorder with an analog input i.e.: Tape/CD recorder etc.): using RCA interconnect cables (not supplied with this product) connect it to the Analog RCA Output (MONO OUT).
6. If you want to broadcast voice using a microphone (not supplied with this product) connect it to the Microphone ¼” Jack Input on the front or rear of the amplifier.
7. Your amplifier is ready for operation.

**Note!** This amplifier is a mono device - Left and Right input signal on the LINE inputs is mixed together.

# Operation

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1. Plug the Power Cable into the electrical outlet.
2. Switch on the amplifier – press the Power Switch (the Power Switch should be in the 1 position). The ON Power Status LED should turn on in a few seconds. If it does not, it means that the amplifier is working under an abnormal condition (a protection mode) – turn off the power, unplug the Power Cable and check whether some of the cables are not short circuited. After fixing the cables turn the amplifier on.
3. Switch on your audio source and start playback.

## **ZONE VOLUME Regulators:**

Available only for the Zone Output connection option.

For each ZONE you can adjust the sound volume from minimum (the knob – max counterclockwise) to maximum (the knob – max clockwise).

**Note!** Distortion and sound quality worsening may occur when the knob is in the maximum position. It may damage the amplifier or speakers. This may void your warranty.

**Note!** High volume levels can damage this amplifier or speakers. This may void your warranty.

## **LINE Input Mixing Regulators (LINE1, LINE2 etc.):**

Adjust the sound / mixing level input for connected audio source devices: mix and fade-in / fade-out.

Turn the selected LINE knob clockwise (+) to make the sound of this line more audible (fade-in) and counterclockwise (-) to make it less audible (fade-out).

Minimum (the knob – max counterclockwise : the marker on the knob shows 0) – no audio signal is transmitted from this line input.

Additional Speaker Output Connection option - in this option the LINE regulators control the output level of the Additional Speaker Output. The ZONE VOLUME regulators are not active.

**Note!** Distortion and sound quality worsening may occur when the knob in the maximum position. It may damage the amplifier or speakers. This may void your warranty.

**Note!** High volume levels can damage this amplifier or speakers. This may void your warranty.

## **TREBLE Regulator:**

You can adjust treble output of the amplifier.

The default: the knob is in the center position : the marker on the knob in the vertical position (0). Turn the knob counterclockwise (-) to decrease the amount of high frequencies. Turn the knob clockwise to increase the amount of high frequencies (+)

The regulation will affect all speaker outputs and the Analog RCA Output (MONO OUT).

**Note!** Distortion and sound quality worsening may occur when the knob in the maximum position. It may damage the amplifier or speakers. This may void your warranty.

# Operation

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## **BASS Regulator:**

You can adjust bass output of the amplifier.

The default: the knob is in the center position : the marker on the knob in the vertical position (0). Turn the knob counterclockwise (-) to decrease the amount of low frequencies. Turn the knob clockwise (+) to increase the amount of low frequencies (+). The regulation will affect all speaker outputs and the Analog RCA Output (MONO OUT).

**Note!** Distortion and sound quality worsening may occur when the knob in the maximum position. It may damage the amplifier or speakers. This may void your warranty.

## **MICROPHONE**

This amplifier allows a connection of one or more wired microphones (the number of microphone inputs depends on a model) and easy voice mixing with the background music and broadcasting voice announcements.

### Microphone Mixing Regulators

Adjust the sound / mixing level input for connected microphones: mix and fade-in / fade-out.

Turn the selected microphone knob clockwise (+) to make the sound of this microphone more audible (fade-in) and counterclockwise (-) to make it less audible (fade-out).

Minimum (the knob – max counterclockwise : the marker on the knob shows 0) – no audio signal is transmitted from this microphone input.

### MIC2 Priority

The front panel microphone input (MIC2) has a priority over all other active inputs (LINE and MIC)- when it is used all active inputs are muted.

**Note!** The signal from the microphone(s) will be broadcasted to all active outputs (Additional Speaker Output or Zone Outputs) and to the Analog RCA Output (MONO OUT).

**Note!** Distortion and sound quality worsening may occur when the knob in the maximum position. It may damage the amplifier or speakers. This may void your warranty.

### CHIME - Voice Announcement Button

Pressing this button will mute all active LINE inputs and activate sound chimes for a short period of time to notify that a voice announcement is to be broadcasted – afterwards all active LINE inputs will be recovered. When the CHIME button is pressed the CHIME Status LED Indicator will be illuminated.

# Operation

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## **MONO OUT**

This output can be used to record audio from the amplifier on an external device or to connect other external devices. The output audio signal level is fixed (is not regulated by the Volume Regulator).

The treble / bass regulation will affect this output.

**Note!** This amplifier is a mono device - Left and Right output contain the same audio signal.

## **SIG – Signal Status LED Indicator**

Once the input audio signal is received by the amplifier this indicator will be flashing.

## **CLP – Clipping Status LED Indicator**

Once this indicator starts flashing it means that the signal is overloaded turn down the level of the volume and/or line inputs.

We strongly advise that your sound system is designed and installed by a licensed professional engineer or designer (installer).

We recommend using high quality TAGA Harmony cables and other installation accessories.

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## Kit Content:

Amplifier	1EA
Instruction Manual	1EA

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Your product is marked with the symbol as showed on the left.  
For EU (European Union) member users:  
This product has been tested and found in compliance with requirements of the European Community 2014/53/EU (RED) directive.



### IMPORTANT!

Your product is marked with the symbol as showed on the left.  
For EU (European Union) member users:

According to the WEEE (Waste electrical and electronic equipment) Directive, do not dispose of this product as household waste or commercial waste. Waste electrical and electronic equipment should be appropriately collected and recycled as required by practices established for your country. For information on recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.

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