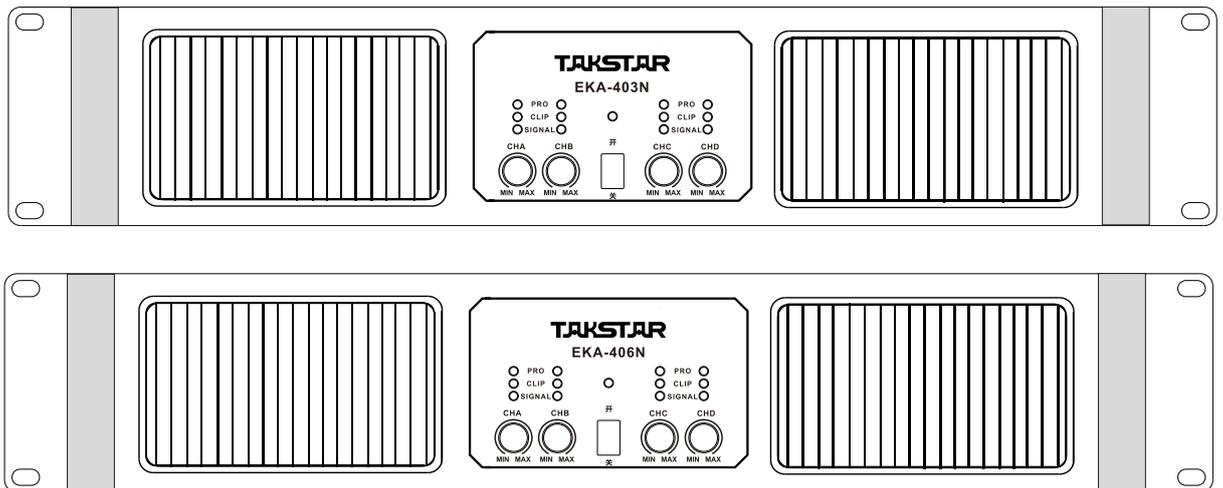


# EKA-403N/EKA-406N

## Entertainment Power amplifier

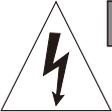
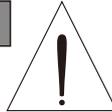
# TAKSTAR



For your protection, Please read these manual, completely before operating the appliance and keep this manual for future reference.

OWNER'S MANUAL ENGLISH AND CHINESE

## HI-QUALITY PROFESSIONAL AUDIO PRODUCT

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<b>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE TOP OR BOTTOM COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</b>		



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (Servicing) instruction in the literature accompanying the appliance.

# IMPORTANT SAFETY INSTRUCTIONS

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS

**WARNING-**When using electric products, basic precautions should always be followed, including the following:

1. Read all the SAFETY INSTRUCTIONS before using the product.
2. Please use the amplifier under the altitude of 2000 meters, and the non-tropical regions.  
3. This product must be earthed. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce risk of electric shock.  
This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and earthed in accordance with all local codes and ordinance.  
**DANGER-**Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product-if it will not fit the outlet, have a proper outlet installed by a qualified electrician.
4. To reduce the risk of injury, close supervision is necessary when the product is used near children
5. Do not use this product near water-for example, near a bathtub, washbowl, kitchen sink, in wet basement or near a swimming pool or the like.
6. This product may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
7. This product should be located so that its location or position does not interfere with its proper ventilation.
8. This product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
9. The product should be connected to a power supply only of the type described on the operating instructions or as marked on the product.
10. This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
11. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power-supply cord, do not pull on the cord, but grasp it by the plug.
12. Care should be taken so that objects do not fall and liquid are not spilled into the enclosure through openings.
13. The product should be serviced by qualified service personnel when:
  - A. The power-supply cord or the plug has been damaged; or
  - B. Objects have fallen, or liquid has been spilled into the product; or
  - C. The product has been exposed to rain;
  - D. The product does not appear to operate normally or exhibits a marked change in performance; or
  - E. The product has been dropped or the enclosure damaged.
14. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.
15. **WARNING:** Do not place objects on the product's power cord or place it in a position where anyone could trip over, walk on or roll anything over it. Do not allow the product to rest on or to be installed over power cords of any type. Improper installations of this type create the possibility of fire hazard and or personal injury.

## SAVE THESE INSTRUCTIONS



# CATALOGUE



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Installation & operating instruction .....	2
Functions & controls instruction .....	3
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## Installation & operating instruction



### ✓ Mains power connection.

Before connecting the amplifier to the mains power socket, make certain that the voltage corresponds with that indicated on the rear of the unit ( $AC220V \pm 10\%$ ). Before connecting the power cable to the mains, always make certain that it is not damaged and that there are no bare wires, always connect the power cable to the amplifier before switching it on and only remove the cable after switching it off.

### ✓ Switching on and off

In an audio system, it's always better to switch power amplifiers on last and off first. Remember to switch off the amplifier before connecting it to or disconnecting it from other units and to switch always on first the mixer and then the amplifier: in this manner, peaks which are annoying and sometimes dangerous particularly for the loudspeakers enclosures are avoided. It is normal for the LEDs to light up for a few moments when switching on.

### ✓ Handling

Do not force knobs and connectors, as they could be damaged if treated with excessive force.

### ✓ Connector cables

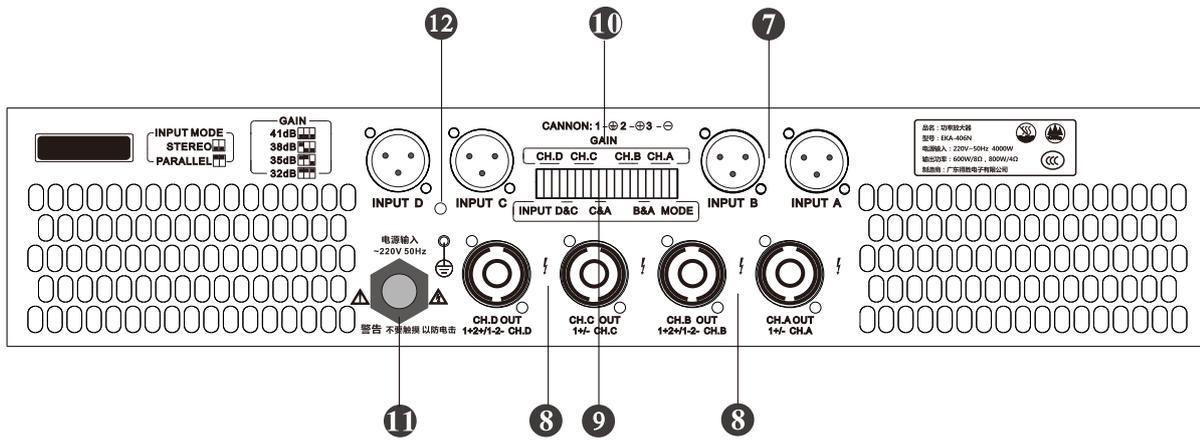
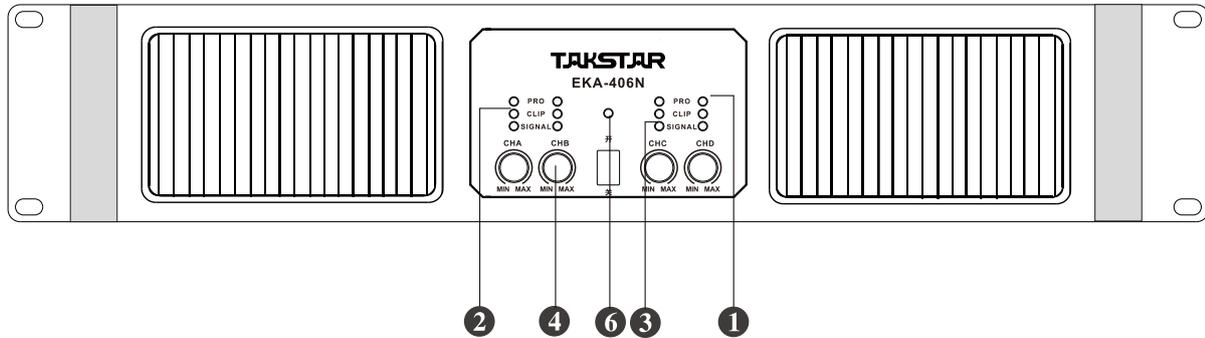
To connect the amplifier to the mixer, always make certain to use only signal cables (screened cables made up of two wires plus a braid screen), not power cables (speaker cables, normally made up of two wires, usually with a greater cross-section): to connect the amplifier to the loudspeaker enclosures, always use power cables, not signal cables, as in the latter case in fact, the power from the amplifiers would be partially dispersed because of the cable's smaller cross-section. Take care of the connector cables. Always hold them by the connectors, avoiding pulling the wire and avoid knots and twists when coiling them: this gives the advantage of increasing their life and reliability.

### ✓ Air circulation for cooling

Amplifier's correct cooling is ensured by internal fans, the speed of which is controlled by special sensors (the speed is proportional to output power, remember never to block the air vents in any way: the air necessary for cooling passes through these). If the amplifier is kept in a flight-case during use, make certain that it has sufficient openings at both the amplifier's air vents. Avoid locating it in very small spaces which don't allow correct air circulation.

### ✓ Warning High Voltage

Please attention fan-out high voltage, and polarity, not short circuit.  
When the product is work, don't touch the output connector for safety.



### 1 PROTECT LEDs

*Protection pilot lights*

*If these LEDs light up, this indicates that one of the various protections safeguarding the different sections of the amplifier and the loudspeaker enclosures has tripped due to an operating fault. In these cases, the power output is normally switched off until normal operating conditions are restored.*

*The following is a description of all the series protections*

- 1) Switch on AC soft working Protection: Limit the electric current when start up, don't affect the others equipments or out the rush of circuit inside.*
- 2) Delay the link load: protect the loudspeaker, keep silence when start up.*
- 3) Circuit damage protection: midpoint excursion and output the AC, limit the damage to extend.*
- 4) Limit the output current Soft protection: The loading impedance is low and too drastic signal; it can protect the loudspeaker and amplifier.*
- 5) Clip and compress protection: When input too big signal, the clip output is distortion, it is easy to damage the speaker unit; this circuit can check the compress signal to protect the loudspeaker.*
- 6) Short Circuit Protection: trips in the event of a short-circuit or overload, limiting the output current.*
- 7) Over hot protection: In high temperature and low overload state, the temperature grow hot quickly, the protect will work to cut the load over 90°C. The amplifier will rework below 75°C.*
- 8) Switch off Protection: First turn off the overload when switch off, it keep the loudspeaker silence out of the rush.*



*Some protection situations require the amplifier to be switched off and then back on for normal operating conditions be restored.*

### 2 LIMIT LEDs

*Amplifier "status" indicators: these LEDs are able to indicate for channels A and B, the operation Of the internal limiter, when inserted, or the clipping of the amplifier:*

*These 2 LEDs are POST-LEVEL: in other words they display the status of the signal when it has already been regulated by the input level controls.*

### 3 SIGNAL LEDs

*Signal "status" indicators: these LEDs are able to indicate for channels A and B, a signal Presence in the inputs of the amplifier.*

### 4 LEVEL

*Control of the input level of the external signal: operates with continual values which vary From "fully closed" (position "MIN" -the signal is not fed to the amplifier sections ) to "fully open" (position "MAX" -the signal is sent to the amplifier sections at the same level as that with which it arrives at the input). in other words, this control operates as an attenuator of the signal fed to the amplifier.*

**5 AIR VENTS**

Amplifier cooling system air in/out vents.

The fan of the cooling system create a flow of air with front to back direction: this means that the Air is taken from the front panel to the back cover, and having cooled the heat sinks and transformer. through the opening on the back side. Care must always be taken to avoid blocking these openings and to never place the amplifier in a position which does not allow sufficient air circulation.

**6 POWER ON**

ON/OFF switch with indication LED. (Active LED)

**7 INPUTS**

Each channel has a XLR input. CH.1 & CH.3 inputs have a XLR input for parallel output.

**8 OUTPUTS**

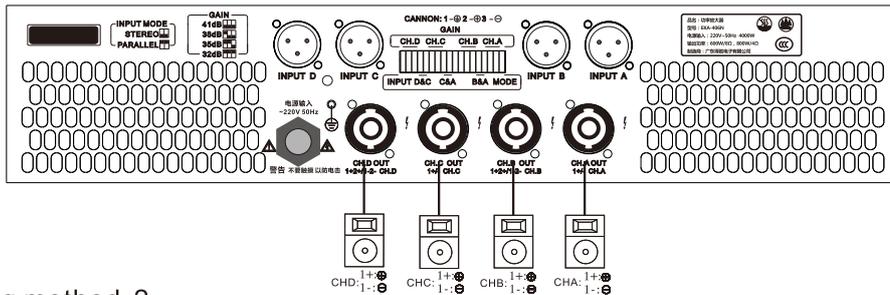
STEREO outputs : output of CHA : the "1+" is the "⊕" of CHA, the "1-" is the "⊖" of CHA, the "2+" is the "⊕" of CHB, the "2-" is the "⊖" of CHB.

output of CHB : the "1+" is the "⊕" of CHB, the "1-" is the "⊖" of CHB.

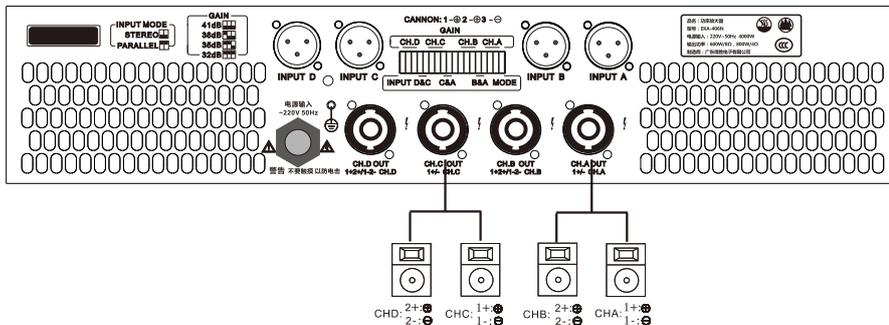
output of CHC : the "1+" is the "⊕" of CHC, the "1-" is the "⊖" of CHC, the "2+" is the "⊕" of CHD, the "2-" is the "⊖" of CHD.

output of CHD : the "1+" is the "⊕" of CHD, the "1-" is the "⊖" of CHD.

Wiring method 1 :



Wiring method 2 :



**9 STEREO/ PARALLEL selector**

Selector for the amplifiers 2 operating setting: allows to decide how use the amplifier in the audio setup, Connect with other units(crossovers, other amplifiers, loudspeaker enclosures).



This control should only be used when the amplifier off, otherwise the loudspeaker's Components could be damaged.

**A) STEREO**

With the STEREO setting, 4 separate signals are treated separately by each channel of the amplifier.

**B) PARALLEL MODE**

With the parallel setting, Input signal from one channel . It can drive and work with other channels.

There are 5 modes for parallel setting:

When switch A&B open, CH.A and CH.B are parallel.



When switch A&C open, CH.A and CH.C are parallel.



When switch C&D open, CH.C and CH.D are parallel.



When switch A&B , A&C open, CH.A and CH.B and CHC are parallel.



When switch A&B , C&D open, CH.A and CH.B are parallel; CH.C and CH.D are parallel.



When switch A&C , C&D open, , CH.A and CH.C and CHD are parallel.



When all switch open, 4 channels are parallel.



**10 GAIN adjust**

According to different file ,it can set different gain for each channel (32dB/35dB/38dB/41dB).

**GAIN Setting**



**11 POWER INTERFACE**

**12 NOISE GATE**

The factory default is - 80dB. Click to change to -75dB, and click again to change back to -80dB.In this cycle.

Press and hold for 5 seconds to close the squelch door function, and then press and hold for another 5 seconds to open the squelch door function.

## AMP SERIES TECHNICAL SPECIFICATIONS

### Power specifications

EIA AC220V output power 1KHz Max THD 0.5% , Test mono	MODE	8Ω	4Ω	Weight
	<i>EKA-403N</i>	<i>300W</i>	<i>400W</i>	<i>19kg</i>
	<i>EKA-406N</i>	<i>600W</i>	<i>800W</i>	<i>20kg</i>

### ELECTRICAL SPECIFICATIONS

#### POWER SPECIFICATIONS

Amplifier	<i>Gain</i>	41dB/38dB/35dB/32dB
	<i>Impedance</i>	30KΩ(balanced, stereo) 15KΩ(unbalanced, parallel)
Frequency response	20-20000Hz(±0.3dB)	
Slew rate	≥12V/us	
Damping factor	≥300	
Crosstalk	>60dB@1KHz	
S/N	>100dB	
Total harmonic distortion (THD+N)	<0.3% 8Ω,1W@1KHz	
Inter-modulation distortion (IMD)	<0.5%	

#### GENERAL SPECIFICATIONS

PROTECTIONS	<i>Amplifier</i> <i>Speakers</i>	<i>POWER ON/OFF protection</i> <i>Transistor thermal protection</i> <i>Short circuit protection</i> <i>Sensor for current on outputs</i> <i>Limiter</i>
CONTROLS	<i>Front panel</i>	<i>ON/OFF switch</i> <i>Signal level control for each channel</i>
	<i>Back panel</i>	<i>STEREO/PARALLEL selector</i> <i>Input gain adjust</i>
INDICATORS	<i>Power:1 blue ; Protect:4 red ; Clip:4 yellow ; Signal:4 blue.</i>	
CONNECTORS	<i>Input</i>	<i>Two Neutrik XLR connectors each channel</i>
	<i>Output</i>	<i>1 Neutrik speakon + 1 Binding-Post connector each channel</i>
POWER SUPPLY	<i>See label on the apparatus</i>	
DIMENSIONS(W×H×D)	<i>483×88×447mm</i>	