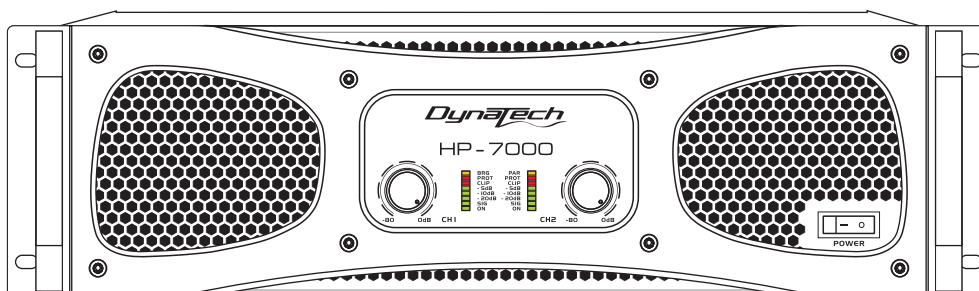




## Audio Electronics and Systems

# User's Manual



HP-4000/HP-5000/HP-7000

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### Important Safety Notice

1. Read the rules, pay attention to all warnings, and comply with these rules.
2. It is forbidden to spray liquid around the product. Please do not placed the liquid container above the product, such as vases, etc. The dry cloth and air pressure gun can be used for cleaning.
3. Be careful not to form a hot air circulation. Please install as the recommended way.
4. Do not install the product near the heat source, and try to keep the environment temperature below 35°C.
5. ⊕ Ground protection, when connect to power supply, corresponding ground protection measurements should be taken.
6. Please protect the power cord from treading and squeezing, especially the plug, power socket and connected devices.  
Warning: Power plug/Equipment coupler, as a circuit cutting off device, should be kept available at any time.
7. Must be in accordance with the following sequence switch to use the product: Turn on: Pre-Amp ~ Amplifier;  
Turn off: Amplifier ~ Pre-Amp.
8. Before power on, must ensure that the power supply voltage in accordance with the requirement of the product.
9. If input signal parallel with more than three power amplifiers, it is suggested to use signal distributor to make sure no distortion of the input signal.
10. Do not connect an output port of one channel into an input port of the other channel in the same amplifier. Do not connect an output port into an output port of another amplifier in series or parallel.
11. When configure an amplifier into a system, the output power of amplifier should be 50%-100% higher than the nominal power which is the same impedance with the loudspeaker. And be careful to use the bridge mode.
12. It is forbidden to connect an oscilloscope probe into an amplifier output interface in state of bridge when the amplifier is being maintained, to avoid amplifier or oscilloscope got broken.
13. Suggest: 1) Please use qualified NL4 SPEAKON connectors.  
2) Please make the appropriate power distribution when more than one amplifier working at the same time, to achieve qualified using environment.

### Safety instructions

	When stacking non-horizontally, the air outlet should be upward or be straight to the vent.		This product is suitable for safe use below altitudes 2000m.(Only for our company Switching Mode Power Supply equipments)
	Input/output connection cables can not be stacked on the air outlet of the product. They should be tied up on both sides of the amplifier.		This product is suitable for safe use of non tropical climate conditions.
	The ambient temperature should be lower than 35°C while running the amplifier		The materials which need to be technically recycled and can not be placed in the trash can.
	Please verify the temperature in the cabinet when the project is debugged, and should be kept below 35°C even though in the extreme conditions.		The lightning bolt triangle is used to alert the user To the risk of electric shock. Non-professional Qualified technicians do not open top or bottom covers for maintenance



**WARNING:** To reduce the risk of fire or electric Shock, do not expose this apparatus To rain or moisture.

**Welcome**

Thank you for purchasing our products. The HP series power amplifier is specially designed for sound system in large stadium, touring and theater applications with high quality components and strict QC procedures. Please read this manual carefully before operate the equipment.

**Unpack**

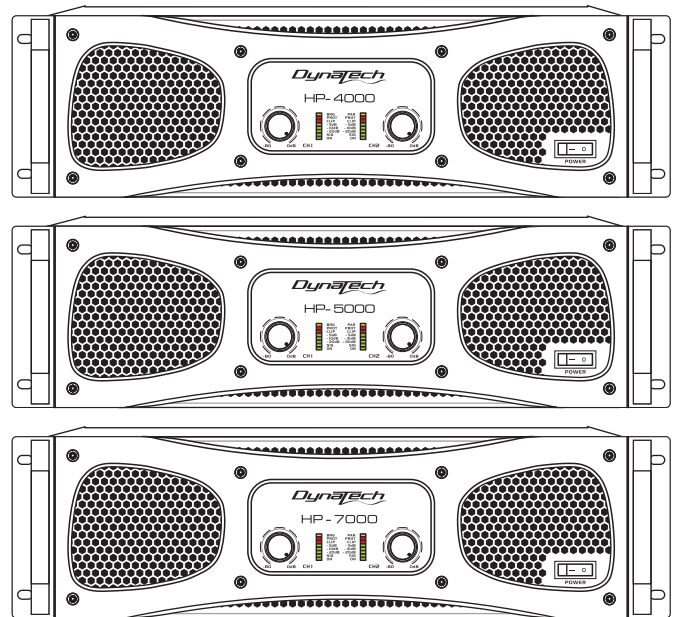
Please make sure if the appearance of the power amplifier was damaged or not during the transportation after you opened the package please make sure the preset voltage is matched with your local AC vlotage (please check in on the retain the package in case you need them for further transportation.

**Support and Service**

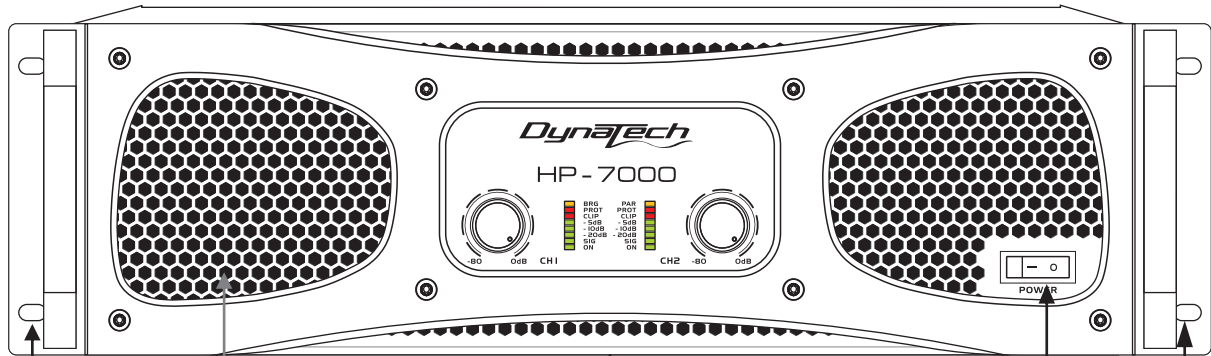
Please contact the local distributors directly in order to get quick after-sales service. if any technique problem, please contact the manufacturer by:  
Email: [info@dynatechaudio.com](mailto:info@dynatechaudio.com)

**Important precaution**

The design of our products has already taken the safe requirement in to consideration and all the finished products have been tested under the requirement of the government before sale. users should read the notice in this manual before operation as there is dangerous high voltages and electricity inter the products. it will increase the chance of getting shock by the electricity if the product falls down, recess in the appearance, soaked or there were some parts loose internal. if there are problems above, please turn off power immediately and send the defective unite to local distributor for service.



Front Panel



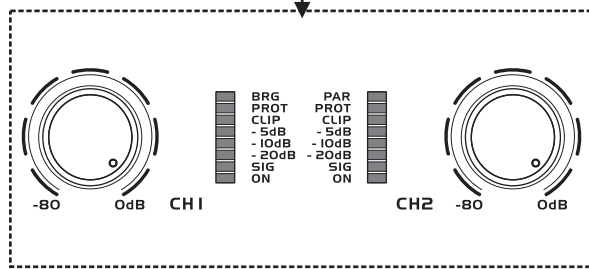
Handel

Air filter

Switch

Mounting hole

Control panel



CH1-CH2 → Gain Controller Knob  
 300° volume knob from 0 to -80dB.  
 For normal operation, please keep the controller at max (0 dB).

- PROT → Illuminates when either protection circuit action.
- CLIP → Illuminates when compressor / limiter is protecting the amplifier from input overload.
- 5dB → Illuminates when output signal around -5dB than full power.
- 10dB → Illuminates when output signal around -10dB than full power.
- 20dB → Illuminates when output signal around -20dB than full power.
- SIG → The signal light
- ON → Illuminates when the amplifier start.

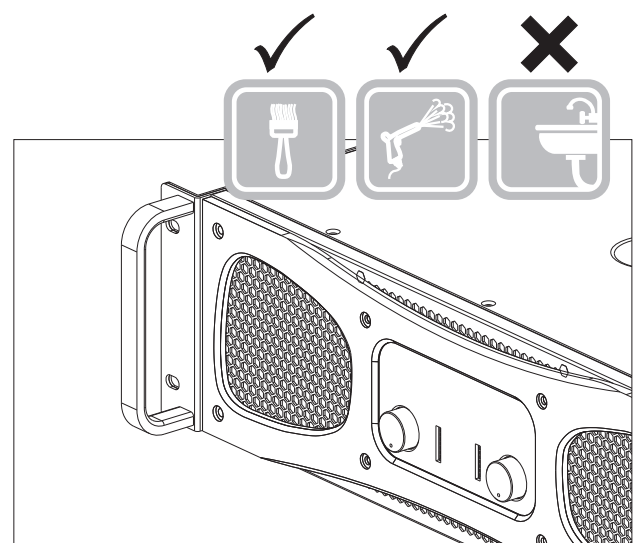
Cleaning guide of the strainer mesh



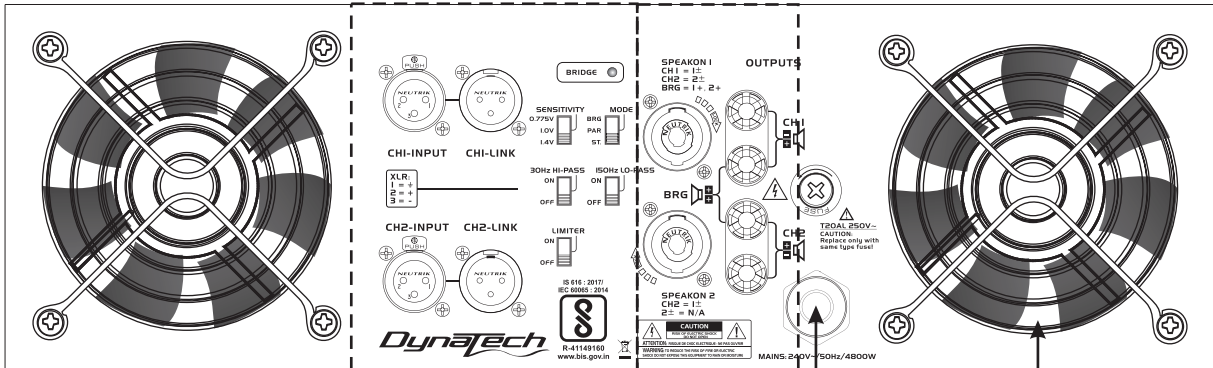
The first time cleaning of the strainer mesh should be right after installation. Recommend to clean the strainer mesh quarterly

Please do not run the product without strainer mesh, or it makes the service life of the product shorten.

**Such condition will be considered as no warranty.**



Rear Panel:



Power cord Fan

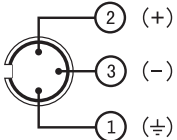
Signal Connection Power output

Signal Cable Connection

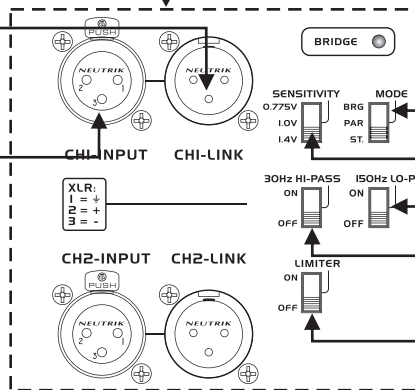
Signal output LINK



Signal input INPUT



Balance XLR connection



Mode switch  
Sensitivity switch  
LO-PASS switch  
HI-PASS switch  
LIMITER switch



It can work at 2-16ohm under stereo or Parallel mode. It can work at 4-16ohm under bridge mode.

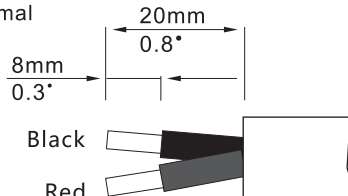


Don't recommend the amplifier working at 4ohm for a long time, this may lead to power amplifier to shorten the service life or failure.

Speaker Connection



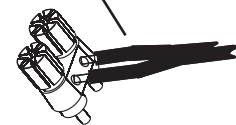
Soldering quality is very important. Virtual soldering and soldering error, would be likely to affect the normal use, even failure.



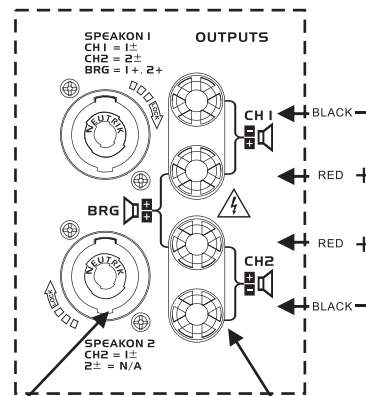
- Negative pole/Black ①- CH1
- Positive pole/Red ①+ CH1
- Positive pole/Red ②+ CH2
- Negative pole/Black ②- CH2



SPEAKON (NL4)



Direct connection without plug



## Power & Wiring distribution

The amplifier power supply isn't a non-resistance load and its use on unstable music signal, so it can not calculate with "Voltage x Ampere=Watt", the actual power consumption can not be fixed formula.

Referring to the power dissipation and power supply/AC of different product for wiring We suggest the users to match not less than the following wiring size specifications, to obtain the better comprehensive properties.

The Standard Voltage : 220/230V/240V

Model	Cable size
HP-4000	$\geq 2.5\text{mm}^2$
HP-5000	$\geq 2.5\text{mm}^2$
HP-7000	$\geq 2.5\text{mm}^2$

When you use 1 power supply socket for many amplifiers, the power cable of the outlet should be bigger and also the internal cable of socket.



Please check the power voltage remark in the rear panel:  
220V/240V = voltage range between AC220V to 240V.

Stable power supply voltage can ensure the amplifier works stability.

The output power will be adjusted according to the difference voltage of power supply

## More than one installation

When in the same AC power supply and its total power is more than 10kW, we suggest you use three phase and five wires in power distribution and the null wire can not use with Ground wire together.

## Check after powered



For the first time powered, you have to use the multimeter to measure voltage, and confirm whether meet the requirements of the product. And do not connect signal and speaker after you confirm everything is ok, then power off the amplifier.

## The importance of Ground wire

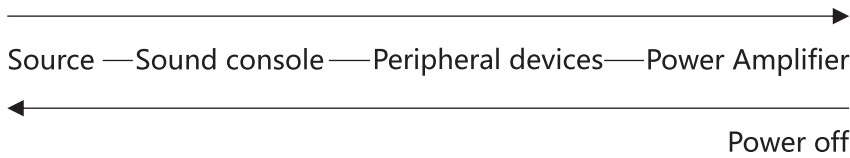


You should connect Ground for safety use.

If you don't have qualified Ground connection or not use the Ground, you may have a electricity shock. To avoid such thing happen, please connect Ground when you use.

**Procedure**

Power On



For high power system, the Power-on order is very important, not in the order is likely to damage the equipment. Therefore we suggest that you use the sequency power device.

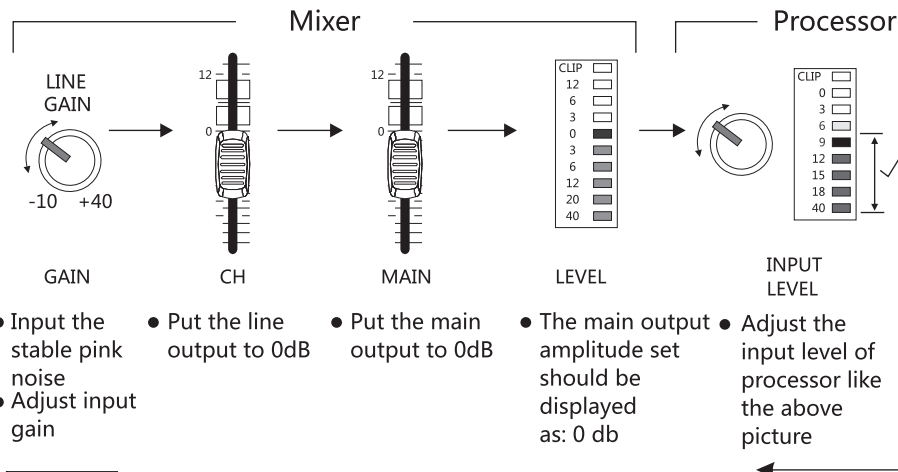
Power Level Adjustment

Power amplifier should be in the condition of no load in the following adjustment process:

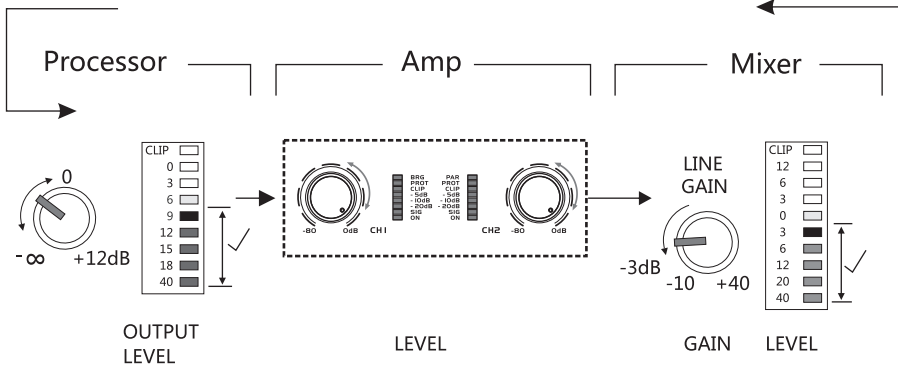
Process :



This is a normal step to adjustment, for more professional adjustment you should have a professional person to do that.



- Input the stable pink noise
- Adjust input gain
- Put the line output to 0dB
- Put the main output to 0dB
- The main output amplitude set should be displayed as: 0 db
- Adjust the input level of processor like the above picture



- Adjust the output level of processor, the range like the above picture shows
- Adjust the volume knob and make the output level within the range as above picture shows.
- Then adjust the input gain to make the main output less 3dB.
- This setting is to ensure twice power.



This step should operated by professional person, if you don't know how to do, please be careful!

**Music Audition**

Adjust the volume from very small to loud slowly, after you confirm the sound is normal then make it more louder. When the speaker output is close to its limit, the CLIP light will lights up and you should turn down your volume now, don't let the CLIP lights on long time, it means over load, may damage the system.

# Specifications

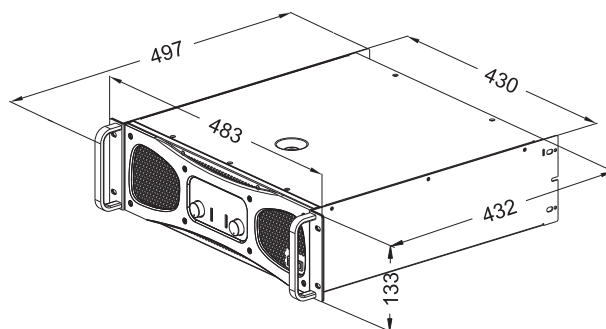
# HP Series Power Amplifier

Model	HP-4000	HP-5000	HP-7000
<b>Output power</b>			
8Ω stereo per channel	800W	1150W	1500W
4Ω stereo per channel	1300W	1800W	2300W
2Ω stereo per channel	1750W	2400W	3600W
8Ω bridge	2550W	3450W	4500W
4Ω bridge	3400W	4600W	7200W
<b>Frequency response</b>			
THD+N	< 0.02%	< 0.02%	< 0.02%
S/N rate(A Weighted)	> 80dB	> 80dB	> 80dB
Damping factor	> 1300	> 1300	> 1300
Slew rate	> 20V/μs	> 20V/μs	> 20V/μs
Input sensitivity	0.775V/1.0V/1.4V	0.775V/1.0V/1.4V	0.775V/1.0V/1.4V
Input impedance(bal/unbal )	20kΩ/10kΩ	20kΩ/10kΩ	20kΩ/10kΩ
Voltage gain	40.5dB	41.85dB	42.5dB
Cooling	Air flow from front to rear		
Protection	Soft start, VHF, DC, short circuit, over load, clip limit, peak current limit over heat, progressive volume		

<b>Connection</b>	
Input	Balance input NEUTRIK XLR-F, Balance output NEUTRIK XLR-M
Output	Two red and black Binding post connectors, NEUTRIK NL4 SPEAKON
<b>Function</b>	
Front panel indicator	Rocker Power Switch / independent channel volume control knob / power indicator / signal indicator / clipping indicator / protection instructions
Rear panel indicator	Stereo/Parallel/Bridge mode selector switch, sensitivity selector switch, HI-PASS, LO-PASS, Limit switch

<b>Dimensions/Weight</b>			
Product Dimension(mm)	483x503x133	483x503x133	483x503x133
Packaging Dimension(mm)	620x585x210	620x585x210	620x585x210
G.W(±2.5kg)	33.4kg	39.1kg	39.8kg
Power Supply	2.5mm <sup>2</sup> cable 240V ~ / 50Hz.±10%	2.5mm <sup>2</sup> cable 240V ~ / 50Hz.±10%	2.5mm <sup>2</sup> cable 240V ~ / 50Hz.±10%

## Product dimensions (mm)



Remark:  
DYNATECH reserves the rights to make changes in specification without prior notice. The final specification is subject to the user manual.



**NO power, no lights on, no fan working**

Make sure the AC cord is fully inserted and connected to a power outlet. Try to use other devices to check the AC power supply, such as lights. Check the amplifier's switch is turned off automatically. If you can not normally turn on the switch, then the amplifier needs to be repaired.

**Amplifier loses voice**

If the amplifier is operated in a heavy load, the fan at full speed, due to lower input signal, it should be back to normal gain after 1-2 minutes. If the amplifier is hot, and the fan doesn't work, then it will be repaired.

**Left and right channel sensitivity inconsistent**

Confirm sensitivity settings are the same at the rear panel . Confirm the volume control settings are the same. (Suggestion: turn the volume to 0 dB at the normal operation.) Confirm the output impedance of the speaker are the same.

**Input of Channel 2 seems of no avail**

Check whether the mode switch at the rear panel is at the stereo position. With parallel and bridge, input of Channel 2 is of no avail.

**Amplifier sound is distorted**

If the red CLIP LED is flashing, that means the amplifier works beyond the normal rated power. Clip circuit will appropriately reduce the volume to avoid a serious overload, but if the input signal continues to increase, limiter may be crossed, resulting in increased distortion.

If the speaker or the speaker cables short circuit or malfunction. Lower than normal levels, Amplifier may be distorted or silent, and the red CLIP (clipping) LED flashing will increased. Other speakers and cables should be used to check them.

If impedance of each channel is less than 2 ohms, connecting too much speakers will be very easy to get the amplifier overload and burnt.

**If the sound is distorted or not clear but the red CLIP LED does not flicker, thus there is no distortion within the amplifier. Speaker may be damaged or input signal gets distortion.**

1. Use other equipment to check whether the speaker is in good condition or not.
2. If the amplifier's gain control sets over low, it may lead to input over load and over-loaded operation of input source. Thus reduce the volume until the distortion disappears, and raise the amplifier gain to idea level. Generally, it is better to set the gain at the max level (0dB) or close to max level.
3. Check all input connection. Don't connect two different sound source with the same channel. Suggest using mixer to mix the sound resource.

**No sound**

Confirm if the gain control is turned on. Confirm if both ends of the input cable is installed correctly. Confirm if there is audio input. If needed, use other sound sources to check or connect other amplifier to present sound source to check.

No sound but signal LED with slight light states that the amplifier has signal output, so sound shall be heard if connect the speaker. Use another speaker to check the connection of speaker.

**No sound, PRT LED is light on**

If amplifier is with serious over heat and in silence as well, keep the amplifier as it is until it turns cool. The fans will run in full speed, but the sound will be recovered in a minutes. If the amplifier touches hot, and the fans don't work, maintenance for amplifier is required.

**Amplifier drones**

Balanced XLR cable is more suitable for long distance operation. If the unbalanced connection (single-core cable) is adopted, drone may be a problem since generally the single-core cable leads in interference.

According to the different connecting type, drone may appear earlier in the signal chain. If the total power is not too large, it will benefit a lot to make all plug in the same AC jumper.

Finally, moderate drone sometimes can be reduced through decreasing amplifier gain and raising high source gain for compensation. But the sound source must be guaranteed offering large enough sound and will not cause over load distortion. If the drone isn't reduced, perhaps it is from sound source.

**The amplifier is required maintenance in the condition below:**

1. If the amplifier smokes or smells burning.
2. If the cabinet has severe indentation and deformation.
3. If the amplifier are dipped into the water.
4. If the internal components loosen.
5. If AC breaker skips out when current increases.





***Dynatech***

**Audio Electronics and Systems**

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IEC 60065 : 2014



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