



Audio Electronics and Systems

User's Manual

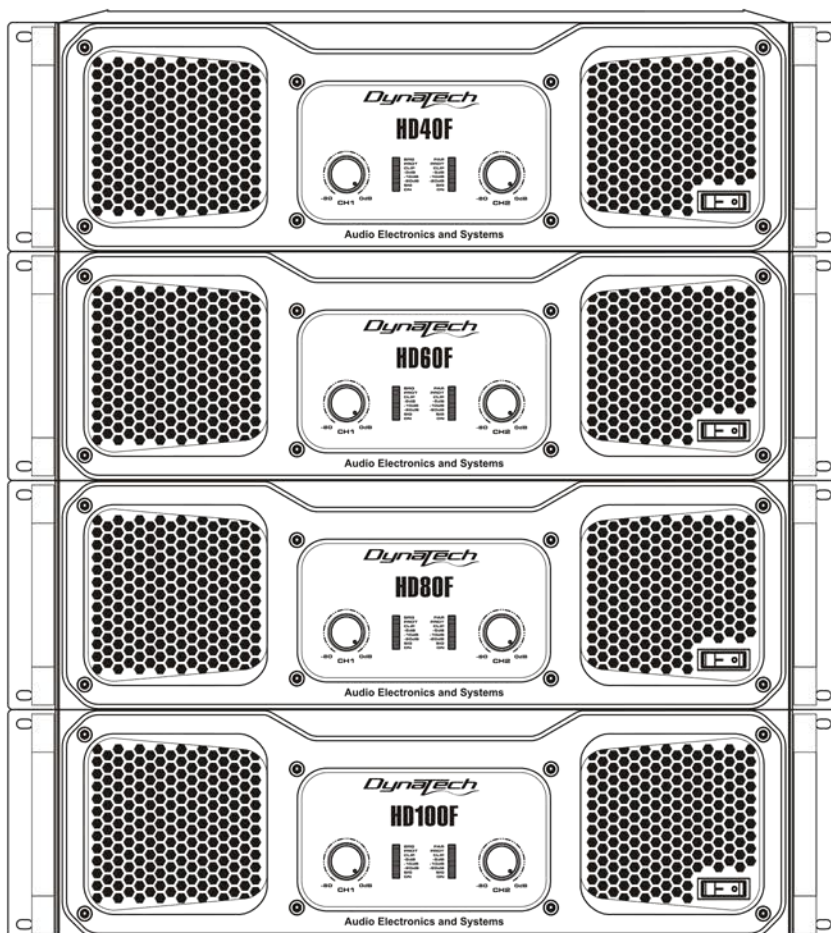










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Important Safety Notice

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 HDF 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

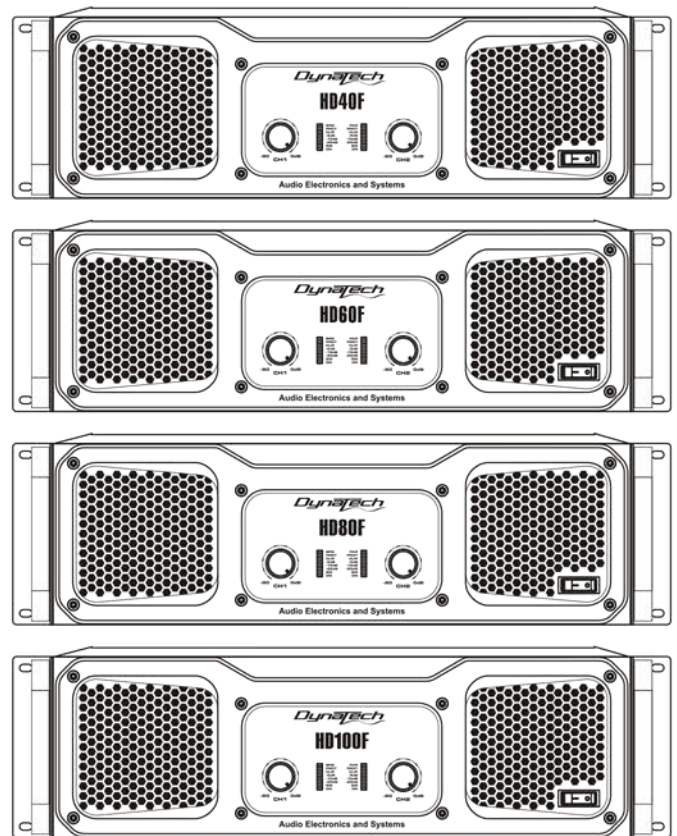
Please make sure if the appearance of the power amplifier was damaged or not during the transportation after you opened the package please make sure the preset voltage is matched with your local AC voltage (please check in on the retain the package in case you need them for further transportation.

Support and Service

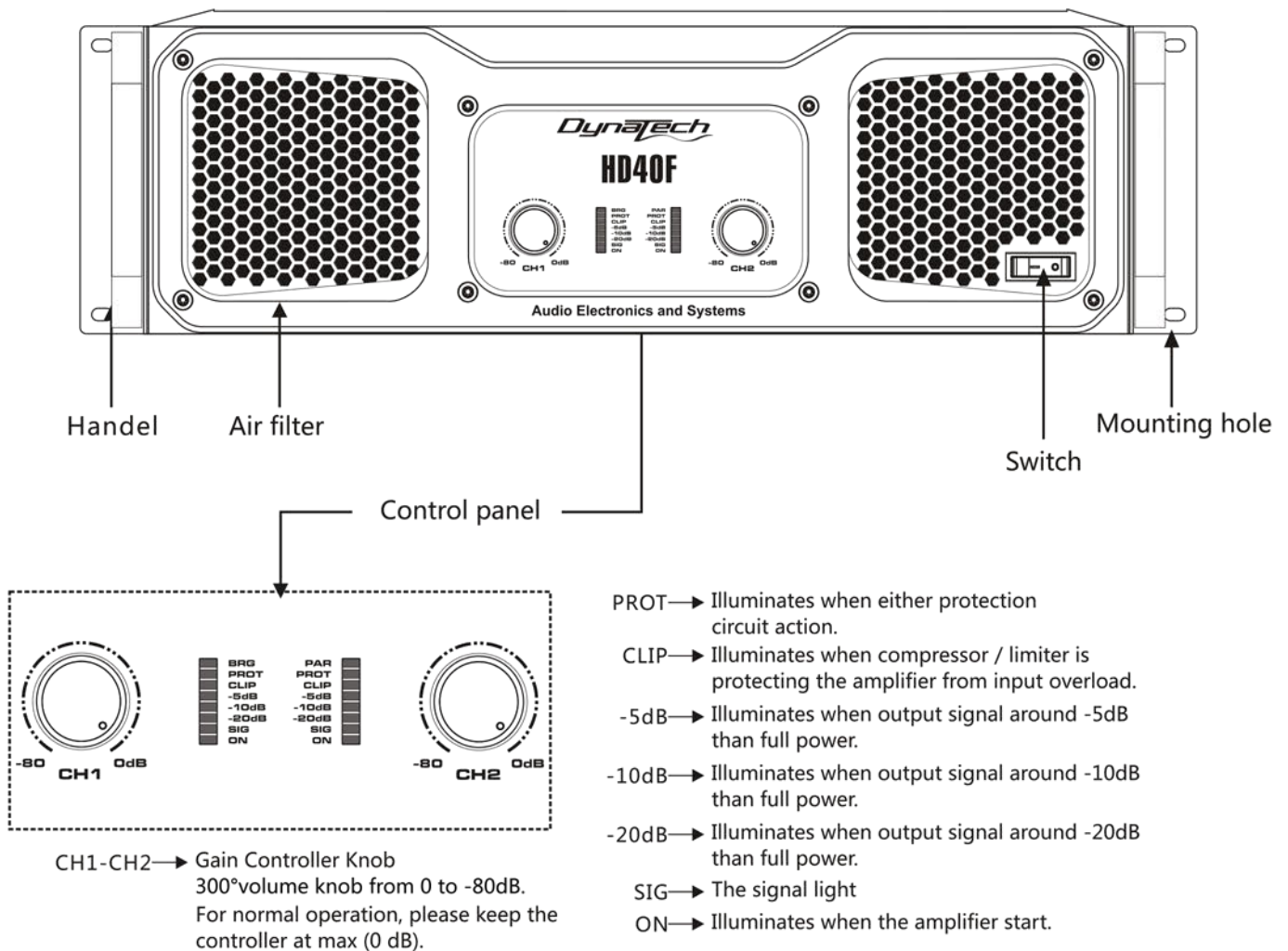
Please contact the local distributors directly in order to get quick after-sales service. if any technique problem, please contact the manufacturer by:
Email: info@dynatechaudio.com

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



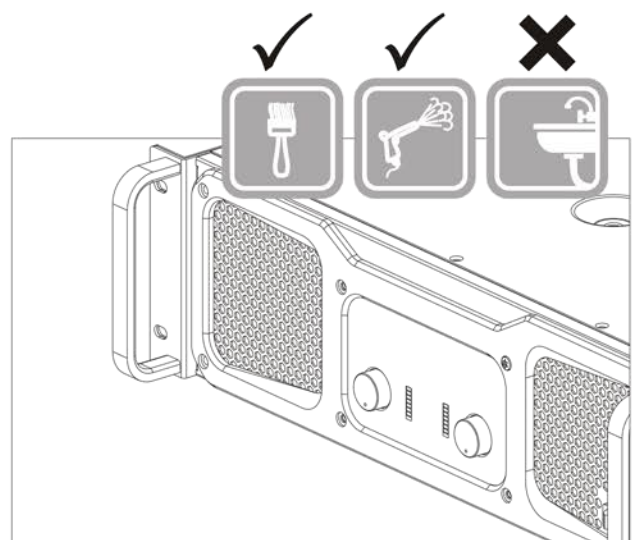
Cleaning guide of the strainer mesh



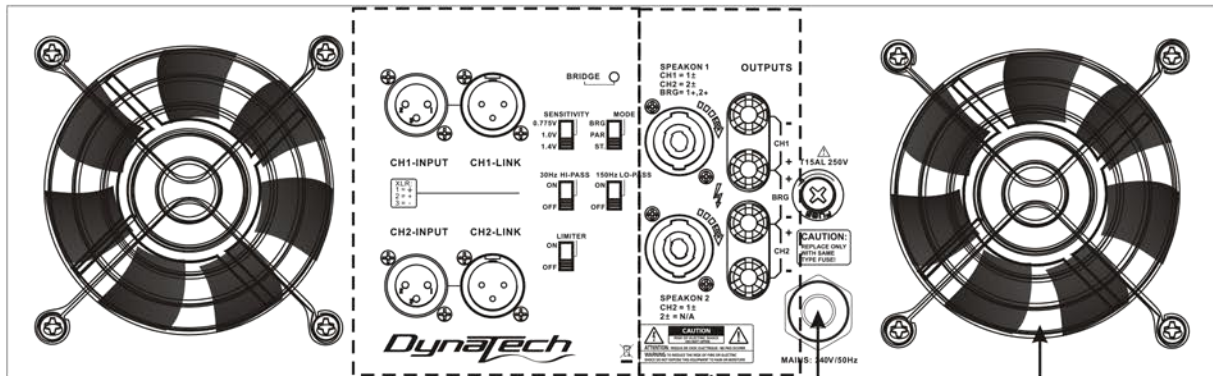
The first time cleaning of the strainer mesh should be right after installation. Recommend to clean the strainer mesh quarterly

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:HD40F/HD60F/HD80F



Power cord

Fan

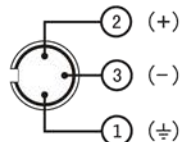
Signal Connection

Power output

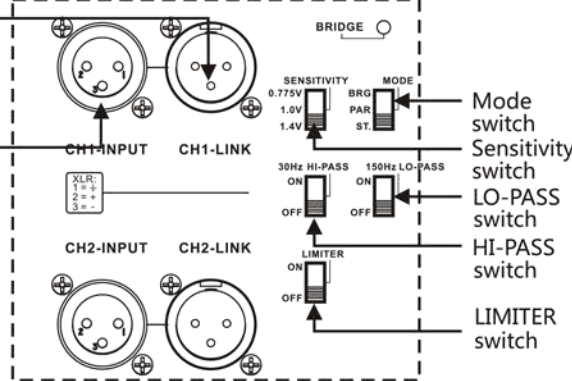
Signal Cable Connection

Signal output LINK

Signal input INPUT



Balance XLR connection



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

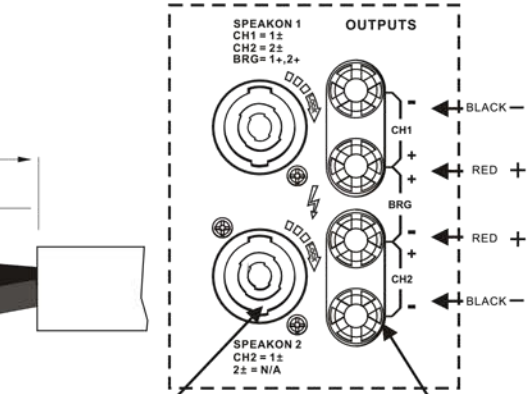
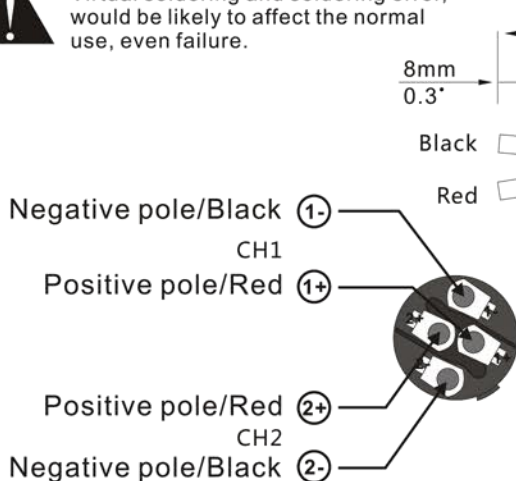


Don't recommend the amplifier working at 4ohm for a long time, this may lead to power amplifier to shorten the service life or failure.

Speaker Connection



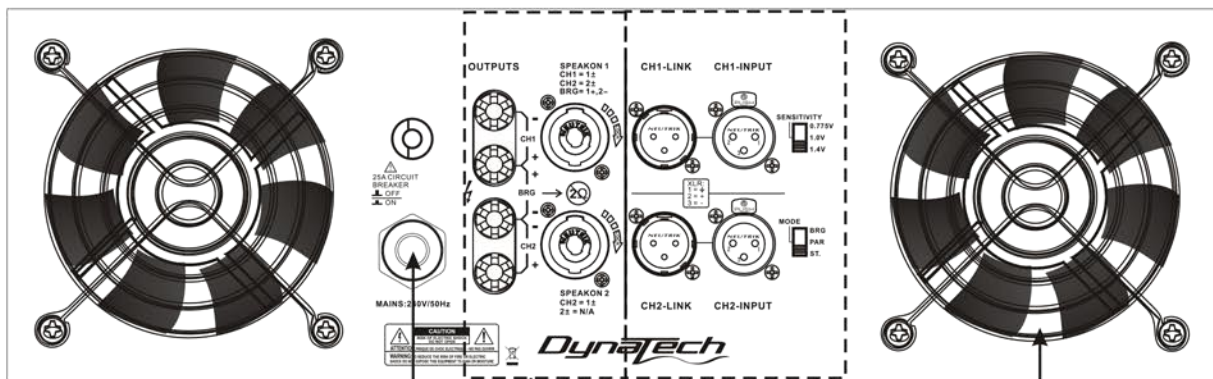
Soldering quality is very important. Virtual soldering and soldering error, would be likely to affect the normal use, even failure.



SPEAKON (NL4)

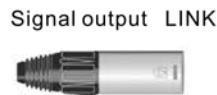
Direct connection without plug

Rear Panel:HD100F

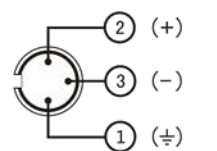


Power cord Power output Signal Connection Fan

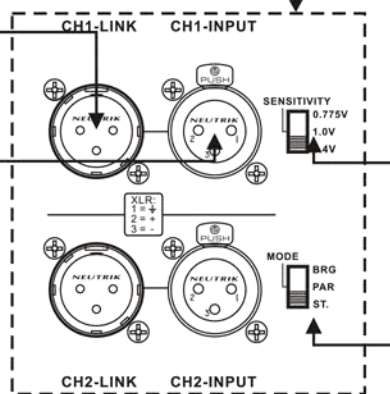
Signal Cable Connection



Signal output LINK



Balance XLR connection



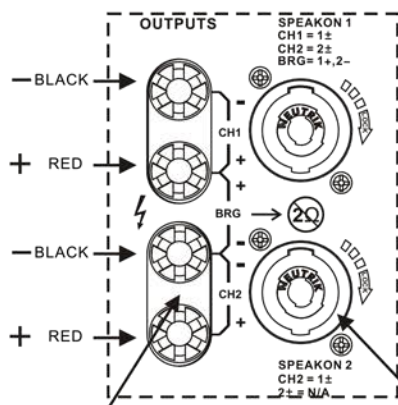
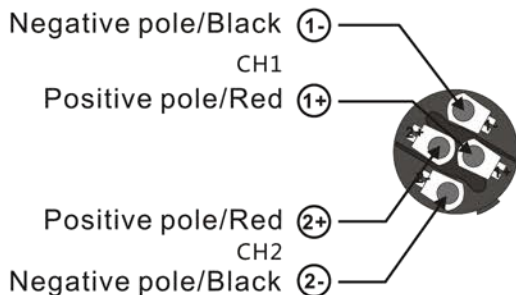
! It can work at 2-16ohm under stereo or Parallel mode. It can work at 4-16ohm under bridge mode.

! Sensitivity switch 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.

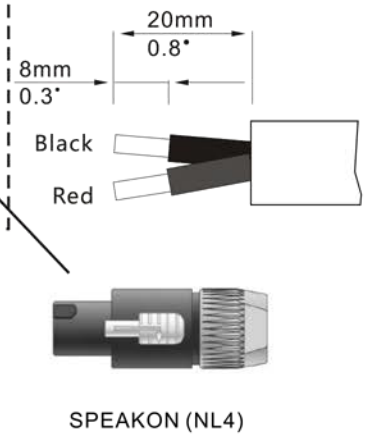
Mode switch

Speaker Connection

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



Direct connection without plug



SPEAKON (NL4)

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
HD40F	$\geq 2.5\text{mm}^2$
HD60F	$\geq 2.5\text{mm}^2$
HD80F	$\geq 2.5\text{mm}^2$
HD100F	$\geq 2.5\text{mm}^2$

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

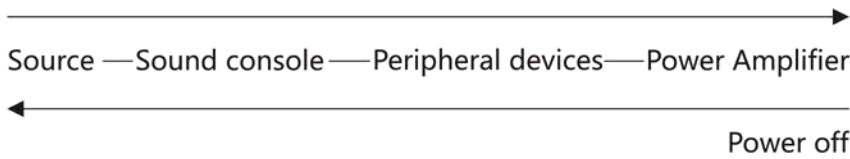


You should connect Ground for safety use.

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.

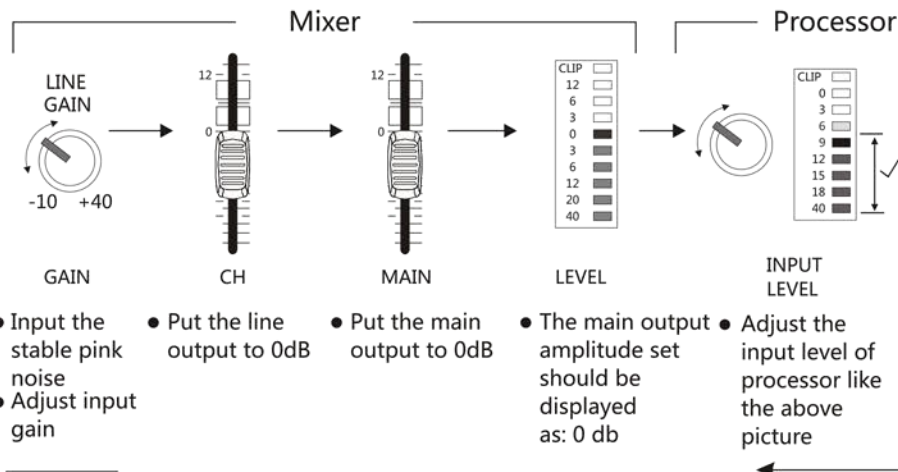
Power Level Adjustment

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

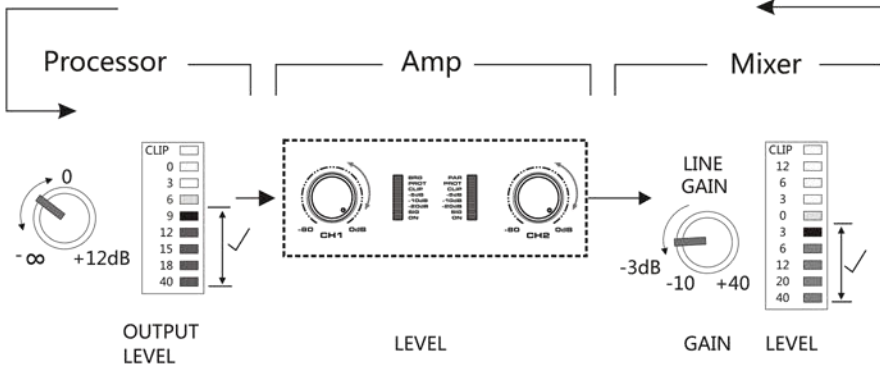
Process :



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.

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.



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

Specifications

HDF Series Power Amplifier

Model	HD40F	HD60F	HD80F	HD100F
Output power				
8Ω stereo per channel	850W	1150W	1500W	2000W
4Ω stereo per channel	1450W	1800W	2300W	3200W
2Ω stereo per channel	2200W	2400W	3600W	4200W
8Ω bridge	2800W	3300W	4500W	6400W
4Ω bridge	4400W	4800W	7200W	7200W
Frequency response	20Hz-20kHz , +0/-0.5dB			
THD+N	< 0.02%	< 0.02%	< 0.02%	< 0.02%
S/N rate(A Weighted)	> 80dB	> 80dB	> 80dB	> 80dB
Damping factor	> 1300	> 1300	> 1300	> 1300
Slew rate	> 20V/μs	> 20V/μs	> 20V/μs	> 20V/μs
Input sensitivity	0.775V/1.0V/1.4V			
Input impedance(bal/unbal)	20kΩ/10kΩ			
Voltage gain	40.5dB	41.85dB	42.5dB	44.2dB
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			

Connection

Input Balance input NEUTRIK XLR-F, Balance output NEUTRIK XLR-M
 Output Two red and black Binding post connectors, NEUTRIK NL4 SPEAKON

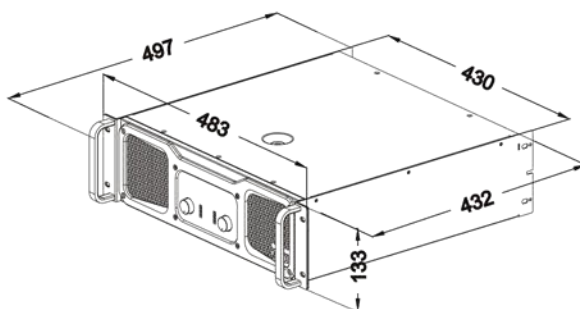
Function

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 , exception of HD100F)

Dimensions/Weight

Product Dimension(mm)	483x503x89	483x503x133	483x503x133	483x503x133
Packaging Dimension(mm)	690x560x220	690x560x220	690x560x220	690x560x220
G.W(±2.5kg)	33.7kg	38.8kg	49kg	40.5kg
Power Supply	2.5mm ² cable 240V~/50Hz.±10%			

Product dimensions (mm)



Suitable model: HD40F/HD60F/HD80F/HD100F

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