

HS_{series}

Powered Monitor Speaker
HS 80M / HS 50M

Powered Subwoofer
HS 10W



Powered Near-field Reference Monitors & Subwoofer

OWNER'S MANUAL

BEDIENUNGSANLEITUNG

MODE D'EMPLOI

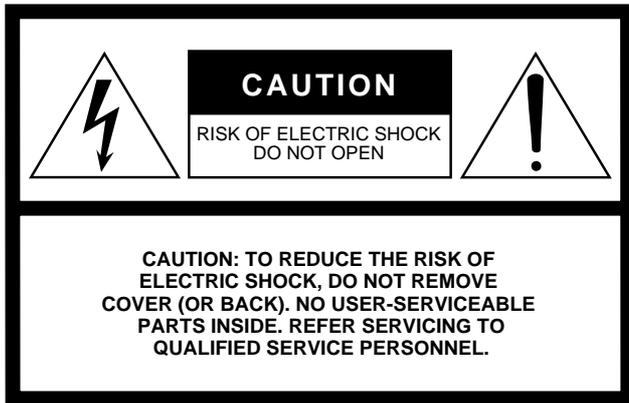
MANUAL DE INSTRUCCIONES

使用说明书

取扱説明書

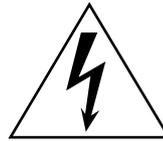
 **YAMAHA**

EN
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The above warning is located on the rear of the unit.

Explanation of Graphical Symbols



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) instructions in the literature accompanying the product.

IMPORTANT SAFETY INSTRUCTIONS

- 1 Read these instructions.
- 2 Keep these instructions.
- 3 Heed all warnings.
- 4 Follow all instructions.
- 5 Do not use this apparatus near water.
- 6 Clean only with dry cloth.
- 7 Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- 8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

- 11 Only use attachments/accessories specified by the manufacturer.
- 12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13 Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

(98-6500)

IMPORTANT

Please record the serial number of this unit in the space below.

Model:

Serial No.:

The serial number is located on the bottom or rear of the unit.

Retain this Owner’s Manual in a safe place for future reference.

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

WARNING: THIS APPARATUS MUST BE EARTHED IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

GREEN-AND-YELLOW	: EARTH
BLUE	: NEUTRAL
BROWN	: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured GREEN-and-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol  or colored GREEN or GREEN-and-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

• This applies only to products distributed by Yamaha-Kemble Music (U.K.) Ltd.(3 wires)

Thank you for choosing a YAMAHA powered monitor speaker or powered subwoofer.
 In order to take maximum advantage of the speaker's features and ensure maximum performance and longevity,
 please read this manual carefully before using powered monitor speaker or powered subwoofer.
 Keep the manual in a safe place for future reference.

Vielen Dank dass Sie sich für einen aktiven Monitorlautsprecher oder Subwoofer von YAMAHA entschieden haben.
 Um die Eigenschaften des Lautsprechers optimal zu nutzen und für höchste Leistung und Lebensdauer lesen Sie diese Anleitung
 bitte genau durch, bevor Sie den aktiven Monitorlautsprecher oder Subwoofer verwenden.
 Bitte bewahren Sie diese Bedienungsanleitung zum späteren Nachschlagen an einem sicheren Ort auf.

Nous vous remercions d'avoir choisi un haut-parleur de contrôle ou un caisson de basses amplifié YAMAHA.
 Pour obtenir les performances optimales de vos haut-parleurs et garantir une longévité maximale, lisez attentivement ce mode
 d'emploi avant d'utiliser le haut-parleur de contrôle ou le caisson de basses amplifié.
 Conservez-le en lieu sûr pour pouvoir vous y référer ultérieurement.

Gracias por elegir los monitores o el subwoofer autoamplificados de Yamaha.
 A fin de aprovechar al máximo las características de los altavoces y obtener un rendimiento y durabilidad óptimos,
 lea atentamente este manual antes de utilizar el sistema.
 Guarde este manual en un lugar seguro para futuras consultas.

感谢您选择了YAMAHA有源监听音箱或有源超低音音箱。
 为了最大限度地利用音箱的功能，确保最佳的性能和最长的使用寿命，请在使用有源监听音箱或有源超低音音箱前认真阅读本说明书。
 请将本说明书存放在安全的地方，以便将来随时参阅。

このたびは、ヤマハ製品をお買い求めいただきまして、まことにありがとうございます。
 製品の優れた性能を十分に生かして、末永くご愛用いただくために、この取扱説明書をご使用前に必ずお読みください。
 お読みになったあとは保証書とともに保管してください。

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PRECAUTIONS

PLEASE READ CAREFULLY BEFORE PROCEEDING

* Please keep this manual in a safe place for future reference.

WARNING

Always follow the basic precautions listed below to avoid the possibility of serious injury or even death from electrical shock, short-circuiting, damages, fire or other hazards. These precautions include, but are not limited to, the following:

Power supply/Power cord

- Only use the voltage specified as correct for the device. The required voltage is printed on the name plate of the device.
- Use only the included power cord.
- Do not place the power cord near heat sources such as heaters or radiators, and do not excessively bend or otherwise damage the cord, place heavy objects on it, or place it in a position where anyone could walk on, trip over, or roll anything over it.
- Be sure to connect to an appropriate outlet with a protective grounding connection. Improper grounding can result in electrical shock.

Do not open

- Do not open the device or attempt to disassemble the internal parts or modify them in any way. The device contains no user-serviceable parts. If it should appear to be malfunctioning, discontinue use immediately and have it inspected by qualified Yamaha service personnel.

Water warning

- Do not expose the device to rain, use it near water or in damp or wet conditions, or place containers on it containing liquids which might spill into any openings.
- Never insert or remove an electric plug with wet hands.

If you notice any abnormality

- If the power cord or plug becomes frayed or damaged, or if there is a sudden loss of sound during use of the device, or if any unusual smells or smoke should appear to be caused by it, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Yamaha service personnel.
- If this device should be dropped or damaged, immediately turn off the power switch, disconnect the electric plug from the outlet, and have the device inspected by qualified Yamaha service personnel.

CAUTION

Always follow the basic precautions listed below to avoid the possibility of physical injury to you or others, or damage to the device or other property. These precautions include, but are not limited to, the following:

Power supply/Power cord

- Remove the electric plug from the outlet when the device is not to be used for extended periods of time, or during electrical storms.
- When removing the electric plug from the device or an outlet, always hold the plug itself and not the cord. Pulling by the cord can damage it.

Location

- Before moving the device, remove all connected cables.
- When setting up the device, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet.
- Do not use the device in a confined, poorly-ventilated location. Make sure that there is adequate space between the device and surrounding walls or other devices: at least 20cm at the sides, 20cm behind and 20cm above. Inadequate ventilation can result in overheating, possibly causing damage to the device(s), or even fire.
- Do not expose the device to excessive dust or vibrations, or extreme cold or heat (such as in direct sunlight, near a heater, or in a car during the day) to prevent the possibility of panel discoloration or damage to the internal components.
- Do not place the device in an unstable position where it might accidentally fall over.

Connections

- Before connecting the device to other devices, turn off the power for all devices. Before turning the power on or off for all devices, set all volume levels to minimum.

Handling caution

- When turning on the AC power in your audio system, always turn on the device LAST, to avoid speaker damage. When turning the power off, the device should be turned off FIRST for the same reason.
- Do not insert your fingers or hands in any gaps or openings on the device (ports, etc.).
- Avoid inserting or dropping foreign objects (paper, plastic, metal, etc.) into any gaps or openings on the device (ports, etc.) If this happens, turn off the power immediately and unplug the power cord from the AC outlet. Then have the device inspected by qualified Yamaha service personnel.
- Do not use the device for a long period of time at a high or uncomfortable volume level, since this can cause permanent hearing loss. If you experience any hearing loss or ringing in the ears, consult a physician.
- Do not operate the device if the sound is distorting. Prolonged use in this condition could cause overheating and result in fire.
- Do not rest your weight on the device or place heavy objects on it, and avoid use excessive force on the buttons, switches or connectors.

XLR-type connectors are wired as follows (IEC60268 standard): pin 1: ground, pin 2: hot (+), and pin 3: cold (-).

Even though this speaker system (HS50M, HS80M only) is magnetically shielded, you may need to move the speaker further away from the video monitor, if a nearby video monitor exhibits any distortion or unnatural color shift.

Interference From Cell Phones

Using a cell phone near the speaker system can induce noise. If this occurs, move the cell phone further away from the speaker system.

Yamaha cannot be held responsible for damage caused by improper use or modifications to the device.

Always turn the power off when the device is not in use.

The performance of components with moving contacts, such as switches, volume controls, and connectors, deteriorates over time. Consult qualified Yamaha service personnel about replacing defective components.

- Illustrations in this manual are for explanatory purposes only, and may not match the actual appearance of the product during operation.
- Company names and product names used in this Owner's Manual are trademarks or registered trademarks of their respective owners.
- Specifications and descriptions in this owner's manual are for information purposes only. Yamaha Corp. reserves the right to change or modify products or specifications at any time without prior notice. Since specifications, equipment or options may not be the same in every locale, please check with your Yamaha dealer.

Setting Up for Superior Monitor Sound

Unlike most other audio and production gear, the way speakers are set up in a room has a dramatic effect on the final sound. This short tutorial provides a basic guide to help you maximize the performance of your Yamaha HS-series monitor speakers.

Listening vs. Monitoring

You'd think that the requirements for "listening" and "monitoring" would be the same, but that is not always the case. A great listening system *can* be a great monitoring system, and vice-versa, but in most cases you'll miss details that are essential to producing the best possible mix on a system that's set up purely for musical enjoyment. The difference is somewhat similar to the difference between a retouched glamour portrait and the original in which every blemish is clearly visible. The model looks a lot better in the retouched photo, but the reality is in the original un-enhanced version. As mixing engineer, or producer, or sonic artist, you'll want to hear the details so that you can create a perfectly balanced mix that will sound good on the widest possible range of audio systems — and that can mean anything from high-ticket boutique audio components in a properly-designed listening room right down to the boom box on top of the fridge in the kitchen. You don't want problems hidden by poor monitor performance to sabotage your sound on other systems.

The legendary Yamaha NS10M became a standard monitor in the music and sound industry (and is still in use in many studios throughout the world) for precisely that reason: it offered flat response and excellent resolution that allowed engineers and producers to hear subtle details that make the difference between good and great sound. The HS-series monitors carry on the tradition with accuracy and detail that can help you make great mixes, while letting you monitor for long stretches with minimum fatigue.

Getting Connected

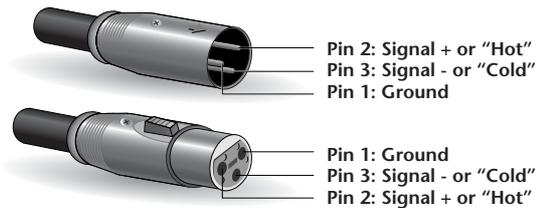
Powered monitors offer many sonic and practical advantages over passive types, but since they're driven by line-level signals you need to exercise the same care in choosing cables and connectors as for the other line-level connections in your studio. Always use high quality cables and connectors, and keep cable runs as short as possible.

Unbalanced lines are fine for relatively short cables runs unless you happen to be in a location that is plagued by high levels of electrical and radio-frequency noise. Of course if you're using equipment that only has unbalanced outputs you have no choice, and will need to set up your system so that everything can be connected with the shortest possible unbalanced cables. If your mixer and monitors are located on the same desktop or tabletop, for example, there should be no problem. But if you need to run line-level cables longer than about three meters (longer than about 10 feet), you might be better off using balanced connections for maximum noise resistance.

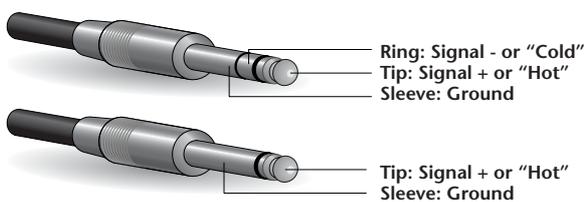
The HS-series studio monitors provide two types of connectors for input, so you can choose the type that best matches your system requirements.

XLR-type Connector (Balanced)

This is the type of connector most commonly used in professional equipment and installations. 3-pin XLR-type connectors like the ones provided on the HS-series monitors are primarily intended for use with balanced signals, and their solid design and construction ensures maximum electrical and mechanical reliability.



Phone Jack (TRS, Balanced or Unbalanced)

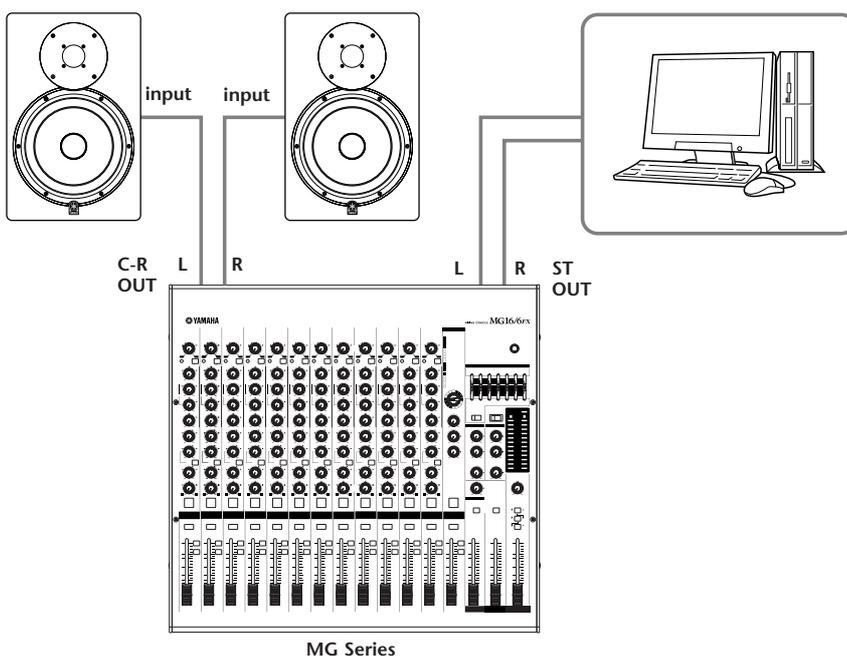
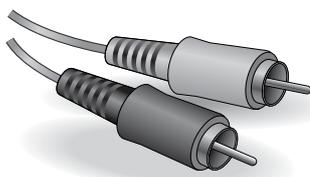


The HS-series studio monitors also feature 1/4-inch phone jack connectors that can be used for either balanced or unbalanced connections.

For balanced connection via these jacks you'll need to use balanced cables fitted with TRS phone plugs — three-contact phone plugs that are basically the same as standard stereo phone plugs with tip, ring, and sleeve contacts (thus the "TRS" designation — see the illustration on the left.)

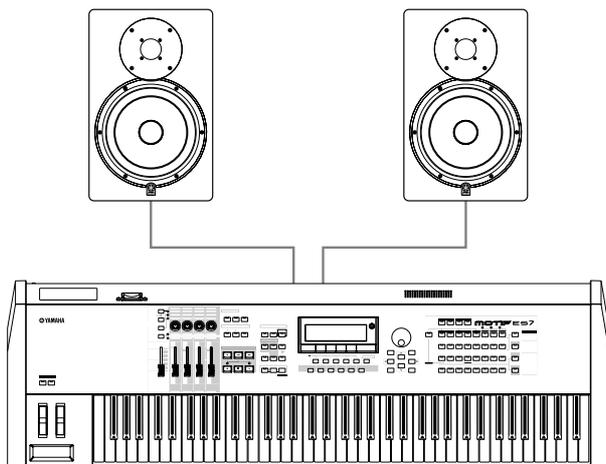
The phone jacks will also accept unbalanced signals — simply plug in a standard mono phone plug. But what if you want to connect equipment that only provides RCA-type pin connector outputs? The solution is simple enough: use either RCA-to-phone plug adaptors or RCA-to-phone cables, and plug into the speaker's phone-jack inputs.

RCA Pin Jack



If you're connecting your HS speakers directly to a mixer such as one of the Yamaha MG-series mixers, they should usually be connected to the mixer's "C-R" (Control Room) outputs so that you can control the monitor level without affecting the level of the signal sent to the mixer's main bus, which will usually be feeding your recorder or DAW (Digital Audio Workstation) in a production type setup.

The HS-series speakers are also an excellent choice for direct connection to your electronic keyboard or other electronic musical instrument.



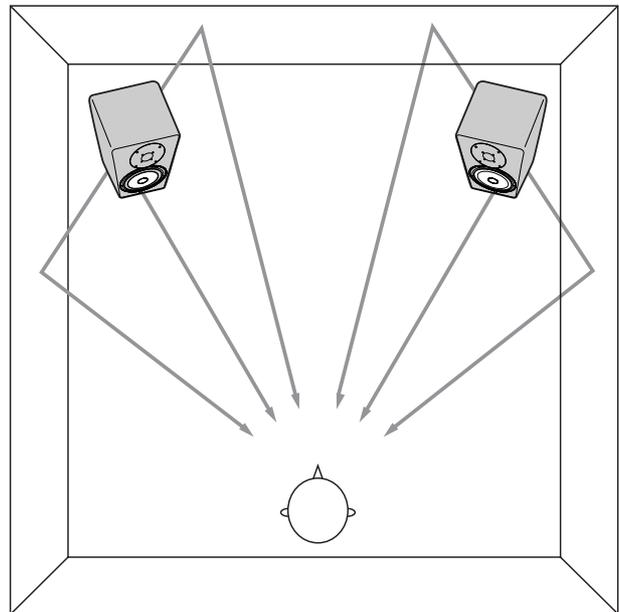
Speaker Placement

Speaker placement is one of the most important considerations when setting up a monitor system, but it is all too often overlooked with the result that performance is seriously compromised. Admittedly the obstacles to perfect speaker positioning in the small studio are formidable. Having the space available to place your speaker system so that it can provide optimum performance is a luxury, but it is definitely worth the time spent doing a little experimentation and measuring to make the most of limited resources. The difference can be astounding. The basics are the same whether you're setting up a stereo or 5.1 surround system.

Proximity to Walls and Corners

For the most accurate response your speakers should be positioned away from walls and *especially* corners, which can play havoc with a speaker's frequency characteristics. A minimum of about 1.5 meters (about 5 feet) away from walls would be ideal, but in reality they'll probably end up being placed on a desktop and pushed up against a wall. Just keep in mind that fact that the closer you get to walls and corners the more exaggerated the speaker's bass response is likely to become, and some compensation — whether you compensate mentally or use some equalization — will probably be required. The HS50M and

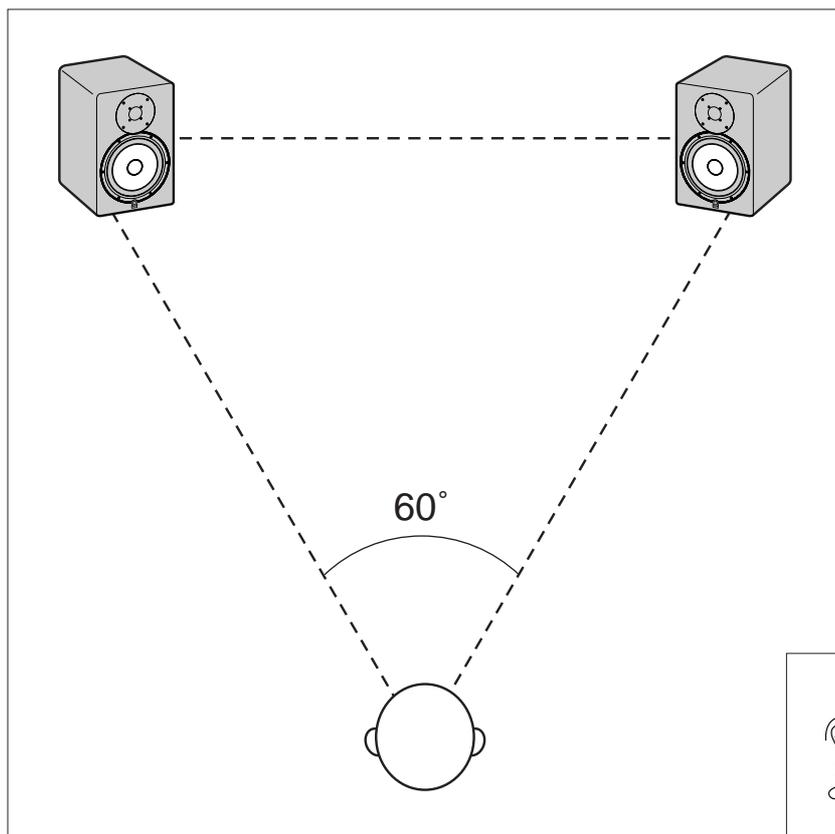
HS80M speakers make this easy by providing a ROOM CONTROL switch that modifies the speaker's bass characteristics to compensate for the exaggeration caused by nearby walls. As your speakers get closer to the walls you might find that setting the ROOM CONTROL switch to the "-2" or "-4" setting gives you more natural response in the bass range. As a reference, remember that you're trying to approach the way the speakers sound when they're located more than 1.5 meters (5 feet) away from the nearest walls.



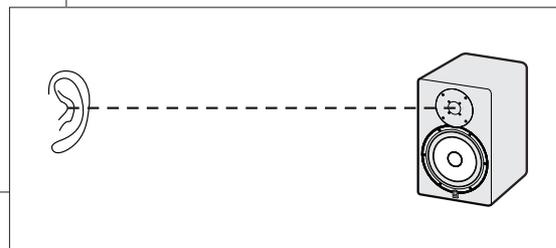
Symmetry

As we've just learned, the response of a speaker can change drastically according to where it is placed in relation to surfaces. So what happens if one of your speakers is up against a wall and the other is out in the open? Rest assured that the results will not be good, and will definitely not be conducive to producing good mixes. You'll have totally different response from your left and right speakers, making it next to impossible to create a well-balanced mix, or even position tracks accurately in the stereo sound field. So whatever you do, if you're serious about your sound make sure that your speakers are located as symmetrically within your listening environment as possible. Use a tape measure to ensure that your speakers are the same distance from the side and rear walls. Large objects can throw the acoustic symmetry of a room off balance, too. It's also important to be aware of the location of doors and windows. It is not always possible to achieve ideal symmetry, but it's worth getting as close as possible.

The “Sweet Spot”



For both stereo and surround mixing your position in relation to the main front speakers — the “sweet spot” as it’s often called — should be one apex of an equilateral triangle. In other words your distance from either speaker should be the same as the distance between the two speakers. The speakers should also be “toed in” to the corresponding 60° angle so that the drivers are aimed directly at the listening position. The height of the speakers should be such that the tweeters are roughly aligned with your ears (this is because high frequencies are the most directional).



Fine-tuning for Stereo

- The speaker LEVEL controls should be set to the same level. A setting of about 12 o’clock corresponds to a nominal input level of about +4 dB.
- Since no subwoofer is being used in this setup, set the LOW CUT switch to “FLAT”.
- When set to “-2 dB” the EQ MID switch attenuates the midrange frequencies slightly to produce a somewhat “softer” sound that may be better for listening or long monitoring sessions. For accurate monitoring, however, set the MID switch to “0”.
- Set the ROOM CONTROL switch according to the distance your speakers are placed from the nearest wall (refer to “Proximity to Walls and Corners”, above).
- For accurate monitoring set the HIGH TRIM switch to “0”. This switch can be set to “-2 dB” to attenuate the highs slightly if you find the sound too bright.

Adding a Subwoofer

Even if you don't plan to set up a surround system, adding a subwoofer can be a real advantage for stereo mixing. If you can't hear the extreme low end there's not much you can do to make it sound great. The extended bass response provided by a good subwoofer can indeed help you to improve the overall quality of your mixes.

The location of your subwoofer is not as critical as the main speakers, because frequencies below around 200 Hz — the region your subwoofer will be working in — aren't directional. To say it another way, the ear can't locate the source of such low frequencies, so in theory the subwoofer can be placed anywhere in the room. In reality it's a good idea to place the subwoofer on the floor somewhere between the main front speakers at the same distance from the listening position as the main speakers, but it doesn't have to be dead center.

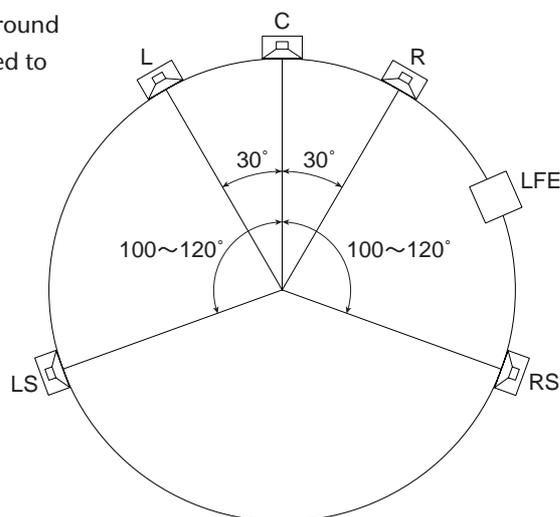
Fine-tuning for Stereo + Subwoofer

- Set the HS50M or HS80M LEVEL control to about 12 o'clock to set the nominal input level to approximately +4dB. If you're using the HS50M set the HS10W LEVEL control to about 10 o'clock, and if you're using the HS80M set it to about 11 o'clock. You can then fine-adjust the HS10W LEVEL control as required. Another approach would be to adjust the HS50M/HS80M output level to achieve the desired relative balance with the subwoofer.
- Start with the HIGH CUT control set at its center click position, which corresponds to a HPF frequency of about 100 Hz. The HIGH CUT frequency can be adjusted later to achieve the smoothest integration with the HS50M or HS80M speakers.
- Turn the HS10W LOW CUT switch ON. Adjust the LOW CUT control to achieve the desired degree of bass extension.
- Set the HS50M/HS80M LOW CUT switch to "FLAT".
- When set to "-2 dB" the HS50M/HS80M EQ MID switch attenuates the midrange frequencies slightly to produce a somewhat "softer" sound that may be better for listening or long monitoring sessions. For accurate monitoring, however, set the MID switch to "0".
- Set the HS50M/HS80M ROOM CONTROL switch according to the distance your speakers are placed from the nearest wall (refer to "Proximity to Walls and Corners", above).
- For accurate monitoring set the HS50M/HS80M HIGH TRIM switch to "0". This switch can be set to "-2 dB" to attenuate the highs slightly if you find the sound too bright.

Setting Up for Surround

If you're going to be mixing for surround, obviously you'll need a surround monitoring system. For a 5.1 surround system, for example, you only need to add a center speaker and two rear speakers to the stereo + subwoofer system described in the previous section. Let's see ... two main speakers plus one center speaker plus two rear speakers is a total of five speakers, and ".1" refers to the subwoofer. All present and accounted for!

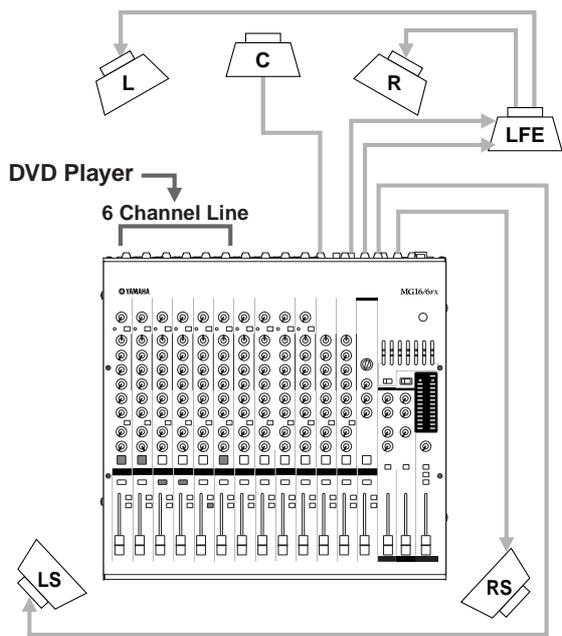
According to the ITU (International Telecommunications Union) specifications for 5.1 surround setup, the main front speakers are positioned in the 60° equilateral triangle relationship to the listening position described earlier, and the rear speakers should be located at the same distance from the listening position, but at an angle of between



100° and 120°, as shown in the diagram above. The center speaker should be placed precisely midway between the main front speakers, at the same distance from the listening position as the other speakers (which means that ideally it will be a bit behind the main left and right speakers).

As you may have deduced by now, the main left and right, center, and rear speakers are all located on the circumference of a circle with its center at the listening position. An easy way to get all the distances right is to use a piece of string cut or marked to the exact distance between the main left and right speakers. Attach the string to a mic stand or other convenient object at the listening position and use it to measure the distance from the listening position to each of the speakers. Stretched from the listening position to the speaker position the string will also provide a convenient guide for aligning the speakers so that they point directly at the listening position.

MG-series Mixer Setup



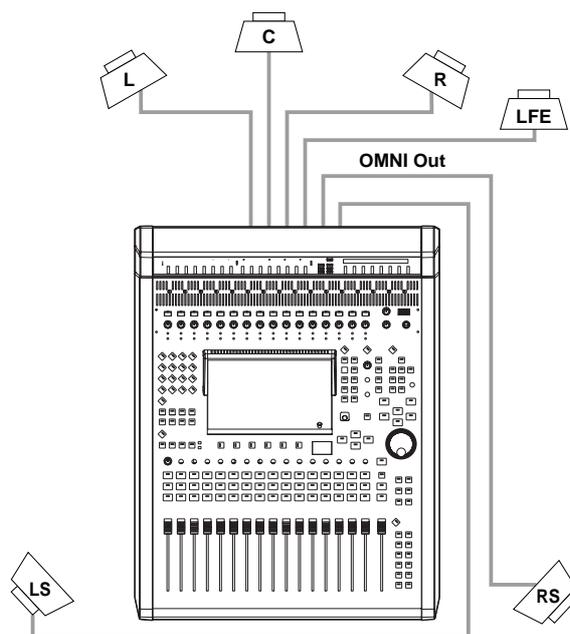
If you're connecting to a standard mixer that is not specifically designed for surround production, your main L and R speakers can be connected to any convenient stereo output pair via the HS10W subwoofer, while the center and rear speakers will be connected to individual output channels.

Example: MG16/6FX

DVD Player	Input Channel	Output Connector	Speaker
L	Ch1 (ST=ON, PAN → L)	ST OUT (L)	L
R	Ch2 (ST=ON, PAN → R)	ST OUT (R)	R
LS	Ch3 (GRP1-2, PAN → L)	GROUP OUT 1(L)	LS
RS	Ch4 (GRP1-2, PAN → R)	GROUP OUT 2(R)	RS
C	Ch5 (GRP3-4, PAN → L)	GROUP OUT 3	C
LFE	Ch6 (ST=ON, PAN→Center, Fader→+10 dB Boost)	ST OUT	LFE

Digital Mixer Setup

If you're connecting your HS-series speakers to a mixing console that features built-in surround handling capability — such as the Yamaha DM2000, DM1000, or 02R96 — each speaker will be connected directly to the console output dedicated to handling that particular surround channel. In this type of setup you can take full advantage of the console's advanced surround mixing and bass management facilities.



Fine-tuning for Surround

- Set the HS50M or HS80M LEVEL control to about 12 o'clock to set the nominal input level to approximately +4dB. If you're using the HS50M set the HS10W LEVEL control to about 10 o'clock, and if you're using the HS80M set it to about 11 o'clock. You can then fine-adjust the HS10W LEVEL control as required. Another approach would be to adjust the HS50M/HS80M output level to achieve the desired relative balance with the subwoofer.

* If you're using the HS50M with a digital mixer, set the HS10W LEVEL control to about 9 o'clock. If you're using the HS80M with a digital mixer set the HS10W LEVEL control to about 10 o'clock.

- Start with the HIGH CUT control set at its center click position, which corresponds to a HPF frequency of about 100 Hz*. The HIGH CUT frequency can be adjusted later to achieve the smoothest integration with the HS50M or HS80M speakers.

* Set to 80 Hz if you're using a digital mixer.

- Turn the HS10W LOW CUT switch ON. Adjust the LOW CUT control to achieve the desired degree of bass extension.

- Set the HS50M/HS80M LOW CUT switch to "100 Hz"*.

* Set to 80 Hz if you're using a digital mixer.

- When set to "-2 dB" the HS50M/HS80M EQ MID switch attenuates the midrange frequencies slightly to produce a somewhat "softer" sound that may be better for listening or long monitoring sessions. For accurate monitoring, however, set the MID switch to "0".

- Set the HS50M/HS80M ROOM CONTROL switch according to the distance your speakers are placed from the nearest wall (refer to "Proximity to Walls and Corners", above).

- For accurate monitoring set the HS50M/HS80M HIGH TRIM switch to "0". This switch can be set to "-2 dB" to attenuate the highs slightly if you find the sound too bright.

Maintain a Consistent Monitoring Level

Another difference between listening and monitoring is that when you're listening for enjoyment you probably listen at significantly different levels at different times: from soft and unobtrusive for background music, right through room-shaking for involved listening or dancing. This is definitely not the case for serious monitoring. The response of your ears changes so drastically according to level, especially in the soft to medium-loud region, that it is essential to maintain a consistent monitoring level otherwise you simply won't get consistent mixing results. You'll undoubtedly need to turn up or down a bit at certain points during the production process when listening for specific problems or effects — in fact it is important to listen to your mix at different levels as a final checking process, bringing the levels down very low to check if any elements of the mix disappear and make sure that the vocal continues to maintain its balance in the mix at very low levels — but in general you should stay within a fairly small range.

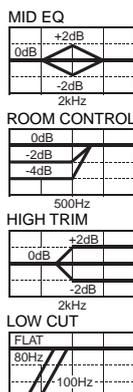
Just what is the best level to monitor at? Although there is a "standard" monitoring level specification,* the answer for most small studios is "whatever is most comfortable for you." You need to monitor at a level that's loud enough so that you don't miss any soft details, but not so loud that your ears become fatigued (or your neighbors complain). If you find yourself turning up the volume after monitoring for a short while, your ears are probably starting to get tired and losing sensitivity. This is obviously bad for your music as well as your ears. So find that "comfort zone" and prepare to make some great music.

*For you techies, the SMPTE RP 200 standard monitoring level is 83 dB SPL (RMS average) at the listening position, or if you're mixing for film you'll need to know that the standard Dolby monitoring level for surround is 85 dB SPL.

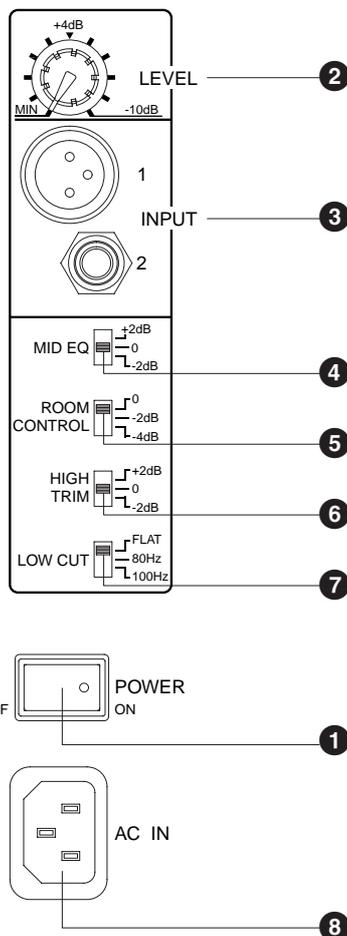
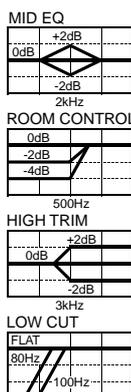
Rear Panel

HS80M, HS50M

HS80M



HS50M



1 POWER switch

Turns power to the speaker on or off. When the power is turned on the tuning fork mark on the front panel will light.

2 LEVEL control

Adjusts the overall output level.

3 INPUT 1/2 connector

These are balanced XLR-type and phone type input connectors.



Do NOT use both the XLR and Phone type connector at the same time. Please connect to only one of these connectors.

4 MID EQ switch

Adjusts the level of the mid-frequency range. Setting the switch to the "0" position produces a flat frequency response. With the "+2 dB" setting, the mid range is boosted by 2 dB. With the "-2 dB" setting, the mid range is cut by -2 dB. (Center frequency is 2 kHz.)

5 ROOM CONTROL switch

Corrects the low frequency exaggeration caused by reflecting off ceilings, walls and floors. Setting the switch to the "0" position produces a flat frequency response. With the "-2 dB" setting, the range below 500 Hz is cut by 2 dB. With the "-4 dB" setting, the range below 500 Hz is cut by -4 dB.

6 HIGH TRIM switch

Adjusts the level of high-frequency range.

HS50M: Setting the switch to the "0" position produces a flat frequency response.

With the "+2 dB" setting, the range above 3 kHz is boosted by 2 dB. With the "-2 dB" setting, the range above 3 kHz is cut by -2 dB.

HS80M: Setting the switch to the "0" position produces a flat frequency response.

With the "+2 dB" setting, the range above 2 kHz is boosted by 2 dB. With the "-2 dB" setting, the range above 2 kHz is cut by -2 dB.

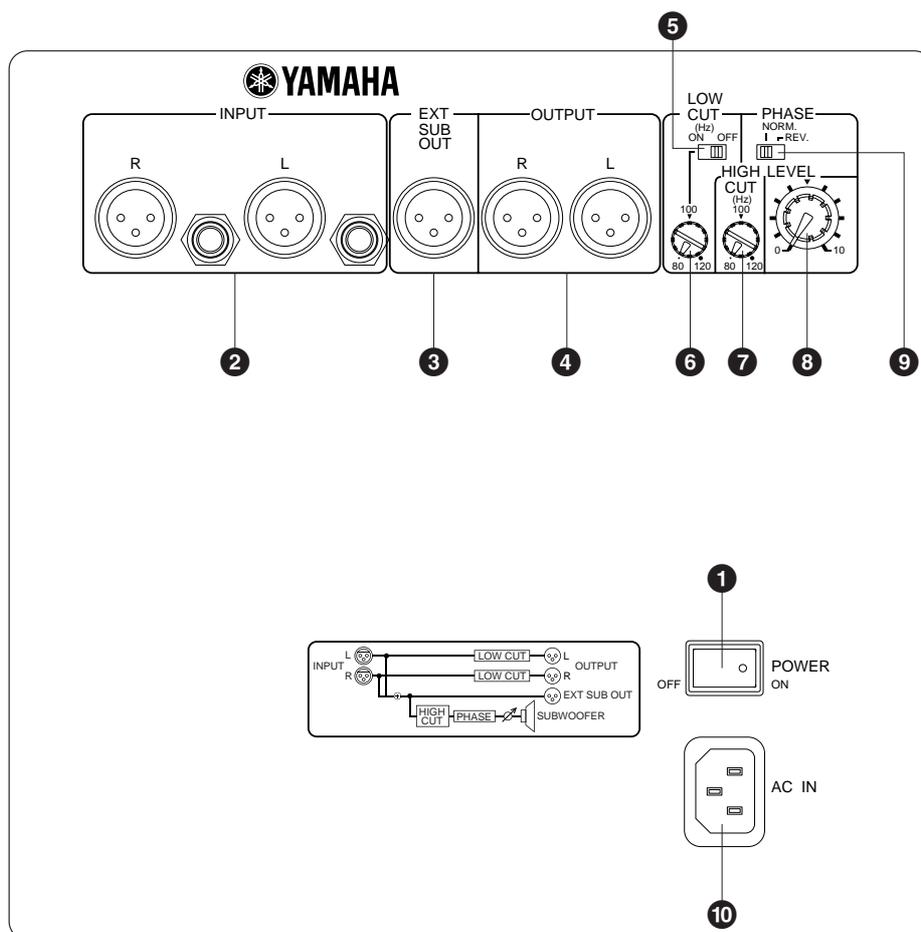
7 LOW CUT switch

Cuts the low-frequency range. With the "80 Hz" setting the range below 80 Hz is cut. With the "100 Hz" setting the range below 100 Hz is cut.

8 AC IN Connector

Connect the supplied power cable here. First connect the power cord to the speaker, then insert the power cord plug into the AC outlet.

HS10W



1 POWER switch

Turns power to the speaker on or off. When the power is turned on the tuning fork mark on the front panel will light.

2 INPUT L/R connector

These are balanced XLR-type and phone type input connectors.

Two different signals can be input at these INPUT connectors. If two signals are input at the same time, they are mixed before being sent to the subwoofer.



Do NOT use both the XLR and Phone type connector at the same time. Please connect to only one of these connectors.

3 EXT SUB OUT connector

This is an XLR-type balanced output connector which outputs the mixed signal received by the INPUT L/R connectors. Use the EXT SUB OUT connector if you wish to add a second subwoofer.

NOTE The LOW CUT switch/control and HIGH CUT control do not affect the output level of the signal sent from the EXT SUB OUT connector.

4 OUTPUT L/R jack

These XLR-type balanced output connectors output the signals received at the INPUT L/R connectors, respectively. If the LOW CUT switch is on, the low frequency is cut. Use the LOW CUT control to set the cutoff frequency from 80 Hz to 120 Hz.

5 LOW CUT switch

If the LOW CUT switch is on, the low frequencies of the signal from the OUTPUT connector is cut. Use the LOW CUT control to set the cutoff frequency from 80 Hz to 120 Hz.

6 LOW CUT control

Use the LOW CUT control to set the cutoff frequency from 80 Hz to 120 Hz when the LOW CUT switch is on.

7 HIGH CUT control

Use the HIGH CUT control to set the cutoff frequency of the signal output from the HS10W from 80 Hz to 120 Hz.

8 LEVEL control

Adjusts the overall output level.

9 PHASE switch

Selects a phase of output sound from the HS10W. You will usually set this switch to "NORM". However, the "REV." setting may improve low-range response, depending on the type and location of the entire speaker system. Try both settings and select the one that produces the best low-end sound.

10 AC IN Connector

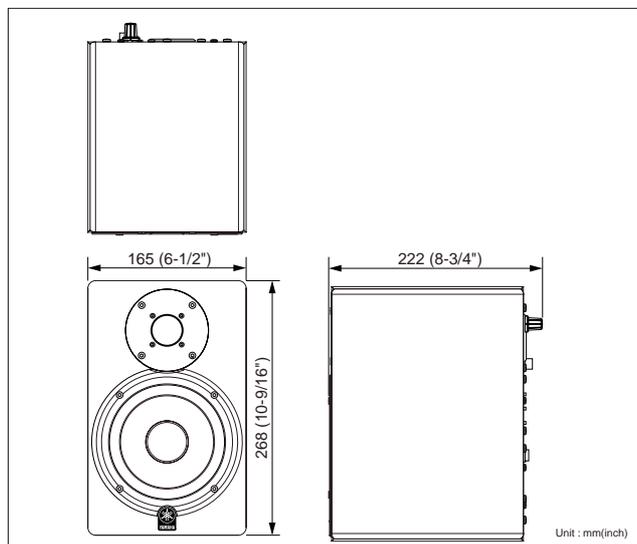
Connect the supplied power cable here. First connect the power cord to the subwoofer, then insert the power cord plug into the AC outlet.

Specifications

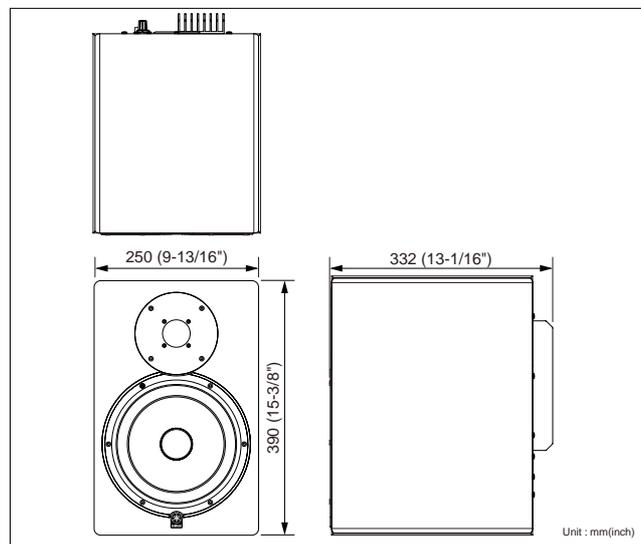
Model		HS50M	HS80M	HS10W
General Specifications				
Type		Biamp 2-way Powered speaker	Biamp 2-way Powered speaker	Powered Subwoofer
Crossover Frequency		3 kHz	2 kHz	—
Overall Frequency Response		55 Hz—20 kHz (-10 dB)	42 Hz—20 kHz (-10 dB)	30 Hz—180 Hz (-10 dB)
Dimensions (W x H x D)		165 x 268 x 222 mm (6-1/2 x 10-9/16 x 8-3/4")	250 x 390 x 332 mm (9-13/16 x 15-3/8 x 13-1/16")	300 x 350 x 386 mm (11-13/16 x 13-3/4 x 15-3/16")
Weight		5.8 kg	11.3 kg	12.5 kg
Speaker Components				
Speaker Components		LF : 5" cone (Magnetic shielding Type) HF : 0.75" Dome (Magnetic shielding Type)	LF: 8" cone (Magnetic shielding Type) HF : 1" Dome (Magnetic shielding Type)	8" cone
Enclosure	Type	Bass-reflex Type	Bass-reflex Type	Bass-reflex Type
	Material	MDF	MDF	MDF
Amp. Unit				
Output Power		Total : 70 W (dynamic power) (LF : 45 W, 4 ohms) (HF : 25 W, 8 ohms)	Total : 120 W(dynamic power) (LF : 75 W, 4 ohms) (HF : 45 W, 8 ohms)	150 W 4 ohms (dynamic power)
Input Sensitivity / Impedance		-10 dBu/10 k ohms	-10 dBu/10 k ohms	-10 dBu/10 k ohms
Output Sensitivity/ Impedance		—	—	-10 dBu/600 ohms
Input Connectors(parallel)		1 : XLR-3-31 type (balanced) 2 : PHONE (balanced)	1 : XLR-3-31 type (balanced) 2 : PHONE (balanced)	1 : XLR-3-31 type (balanced) 2 : PHONE (balanced)
Output Connectors		—	—	1 : XLR-3-32 type (balanced) x 1 (EXT SUB) 2 : XLR-3-32 type (balanced) x 2 (L&R)
Controls		LEVEL control (+4dB/center click) LOW CUT switch (FLAT/80/100 Hz, 12 dB/octave) EQ : MID (+/- 2dB at 2kHz) : HIGH (+/- 2dB at HF) : ROOM CONTROL (0/-2/-4 dB under 500Hz)	LEVEL control (+4dB/center click) LOW CUT switch (FLAT/80/100Hz, 12 dB/octave) EQ : MID (+/- 2dB at 2kHz) : HIGH (+/- 2dB at HF) : ROOM CONTROL (0/-2/-4 dB under 500Hz)	LEVEL control PHASE switch : NORM./REV. HIGH CUT control : 80—120Hz (center click) LOW CUT control : 80—120Hz (center click) LOW CUT switch : ON/OFF
Indicator		Power ON : White LED	Power ON : White LED	Power ON : White LED
Power Consumption		45W	60W	70W

Dimensions

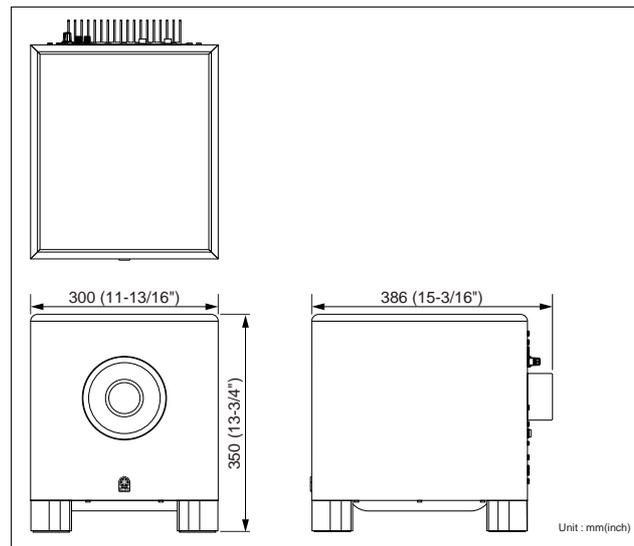
HS50M



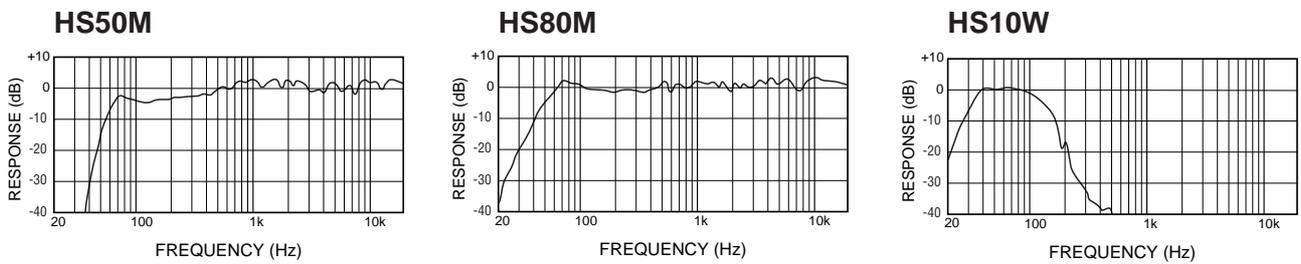
HS80M



HS10W

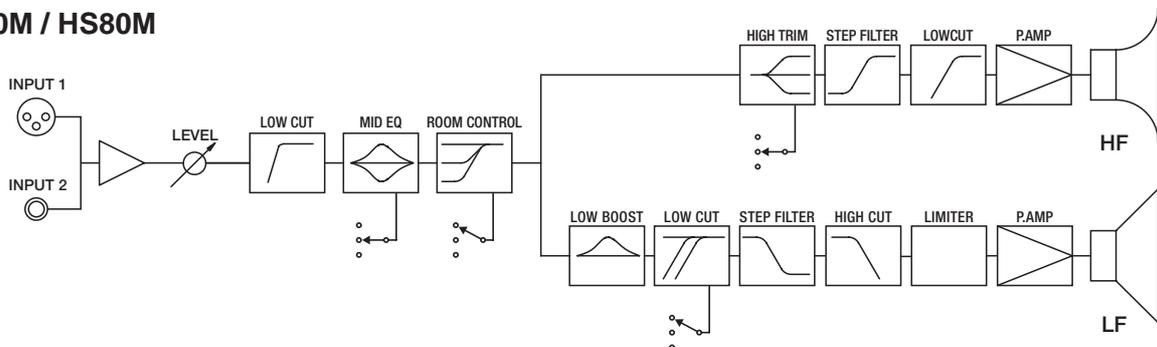


Performance graph

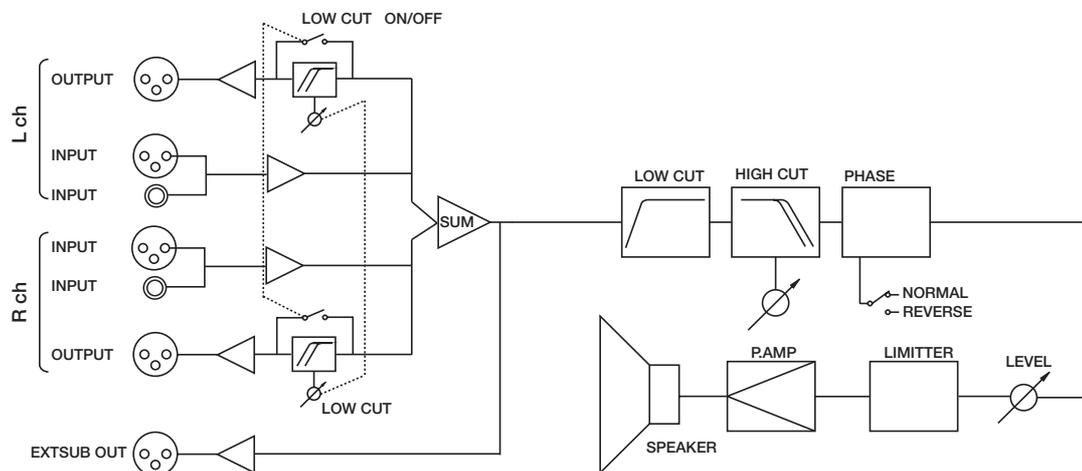


Block Diagram

HS50M / HS80M



HS10W



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