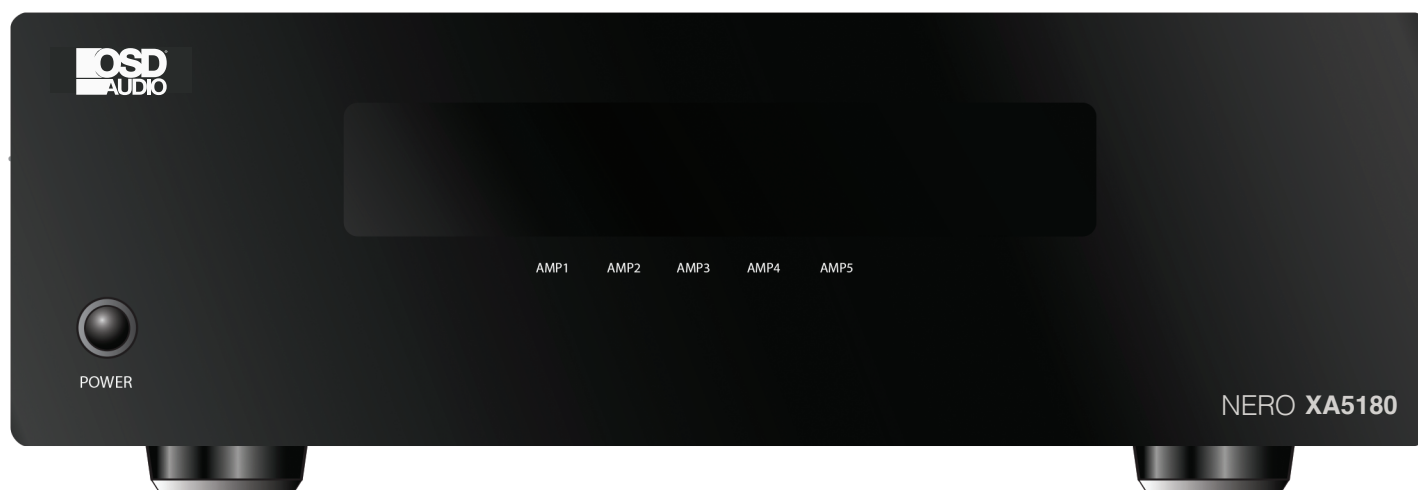




NERO **XA5180** | HOME THEATER A M P L I F I E R



OWNER'S MANUAL



IMPORTANT SAFETY INSTRUCTIONS PLEASE READ FIRST

General Note on the Declaration of Conformity: We hereby declare that this device is in accordance with the essential requirements of the European Directive 2014/35/EU or 2001/95/EC (if applicable). The full EU declaration of conformity can be requested at the following address: InMusic GmbH Harkortstr. 12 - 32 40880 Ratingen GERMANY



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 manufacture'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 plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is 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 the plugs, convenience receptacles, and at 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 or rack is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.






13. Unplug the apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified 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 has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that objects filled with liquids, such as vases, shall not be placed on apparatus.
16. WARNING: The mains plug/appliance coupler is used as disconnect device, the disconnect device shall remain readily operable.




17. - This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of non-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.
 - Warning: To reduce the risk of electric shock, do not remove cover (or back) as there are no user-serviceable parts inside. Refer servicing to qualified personnel.
 - The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the appliance.



IMPORTANT SAFETY INSTRUCTIONS

18.  Protective earthing terminal (For class I apparatus with earthing). The apparatus should be connected to a mains socket outlet with a protective earthing connection.
19.  (For class II apparatus only) This equipment is a Class II or double insulated electrical appliance. It has been designed in such a way that it does not require a safety connection to electrical earth.
20.  Correct Disposal of this product. This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.
21. No naked flame sources, such as lighted candles, should be placed on the apparatus.
22. Do not install this equipment in a confined or building-in space such as a book case or similar unit, and remain a well ventilation conditions at open site. The ventilation should not be impeded by covering the ventilation openings with items such as newspaper, table-cloths, curtains etc.
23. CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.
24. This apparatus is for professional use only.
25. The apparatus is intended to be used in moderate climates.
26. (If applicable) The apparatus is intended to be used in tropical climates.
27. WARNING (If applicable): The batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.
28. CAUTION (If applicable): Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
29. (For product contains battery) Attention should be drawn to environmental aspects of battery disposal.
30. Voltage selector (If applicable):

The product can be supplied by two different mains voltages that can be selected by adjusting the voltage selector. The voltage selector must be set to match the current mains voltage and need to be always checked before inserting the mains plug into socket-out. Please ask a qualified personnel to help you replace the mains fuse link before you adjust the voltage selector.

31. WARNING (If applicable): For the terminals marked with symbol of “” may be of sufficient magnitude to constitute a risk of electric shock. The external wiring connected to the terminals requires installation by an instructed person or the used of ready-made leads or cords.

32. Class 2 wiring (If applicable): To reduce the risk of electric shock, The external wiring connected to the terminals marked with “class 2 wiring” requires installed with class 2 wiring by an instructed person or the used of ready-made leads or cords.

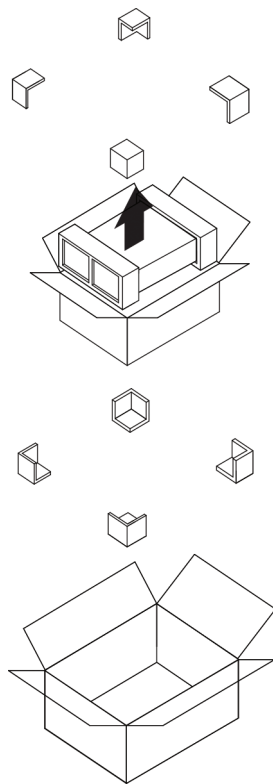
33. (For apparatus contains a coin/button cell battery):  (or ) Warning: Do not ingest the battery, Chemical Burn Hazard. The remote control supplied with this product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death. Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

OVERVIEW

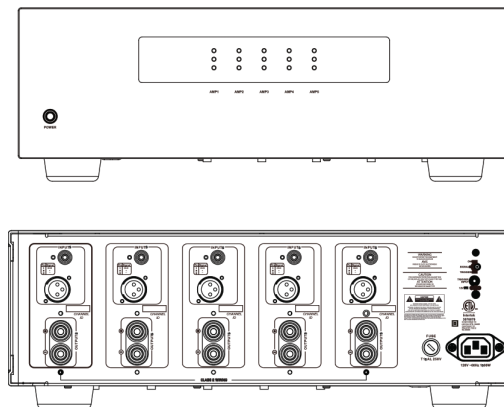
XA5180 MULTI CHANNEL AMPLIFIER

Congratulations and thank you for purchasing the XA5180 amplifier. The XA5180 has been carefully designed in the USA to deliver the best possible sonic performance and reliability. Your XA5180 amplifier will bring many years of enjoyable listening to your music system or home theater.

Save all packing materials



FEATURES



XA5180 Front & Rear Panel

BEFORE YOU BEGIN

In order to receive the maximum enjoyment from your new amplifier, please take a few minutes to read this manual. This important information will help you make certain that the amplifier is properly configured for operation with the rest of the equipment in your system. This brief investment of time will provide major dividends by making certain that your amplifier is properly installed and optimized for the specific of your installation.

If you have any question about this product, its installation or operation, please contact Optimal Speaker Design at www.osdaudio.com

your new amplifier's shipping carton and packing materials were specially designed to cushion it from shocks and vibration during transit. We strongly suggest saving these materials to use if you move, or if the unit ever needs to be shipped back to us for any reason. To minimize the size of the carton in storage, carefully open the top and bottom flaps and fold the carton flat. Other cardboard inserts may be stored the same way. Other packing materials should be saved along with the carton in a plastic bag.

Your new amplifier is engineered using heavy-duty materials for high reliability and weighs 50 pounds and requires that you pay special attention during unpacking and installation. You may wish to have someone help you remove the unit from its carton and place it in the proper location.

After you unpack the amplifier, please check to make sure the following accessories are in the box:

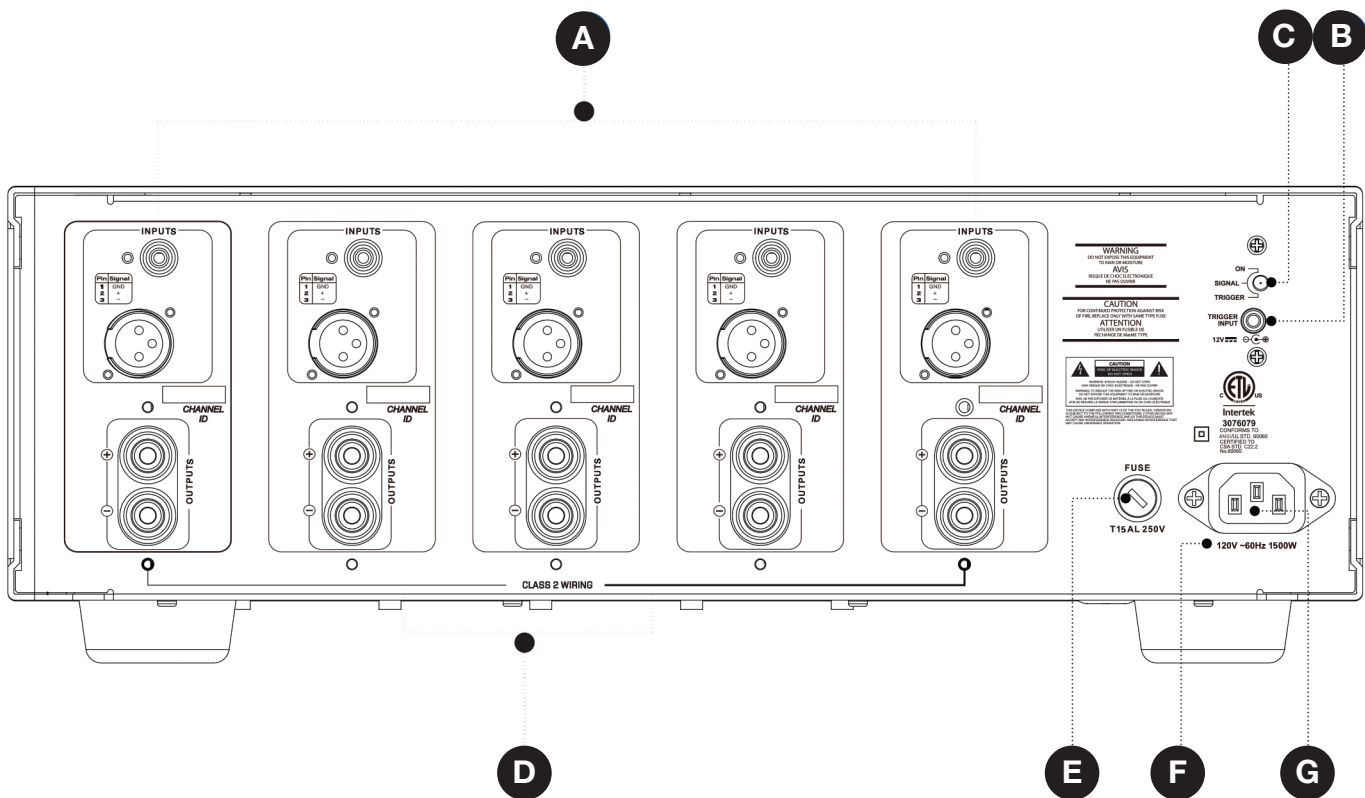
Owner's Manual
AC Power Cord
Trigger Cable

If any of the above is missing from your shipment, please contact Optimal Speaker Design immediately.

The XA5180 is a state of the art, high performance, audio power amplifier. It is built utilizing elementary circuitry from input to output.

The XA5180 features:

- ▶ 120 watts RMS x 5 (all channels driven simultaneously @ 8 ohms from 20Hz to 20kHz with less than 0.02% total harmonic distortion, A-weight filter).
- ▶ 180 watts RMS x 5 (all channels driven simultaneously @ 4 ohms 20Hz to 20kHz with less than 0.03% total harmonic distortion, A-weight filter).
- ▶ Custom-designed high current power supply driven by a .9 KVA toroidal transformer.
- ▶ Four discrete output devices for each channel.
- ▶ 27,200 uf per channel filter capacitance protected by an advanced protection circuit.
- ▶ Custom-designed heatsinks on each amplifier module, enabling the amplifier to function at full power without the need for noisy fans.



A. Audio Inputs (see page 6)

Use these jacks to connect the XA5180 to the outputs of a surround processor, preamplifier AV receiver with pre-out connection, DVD player with discrete five channel output, or HDTV product with built-in surround decoder.

B. Remote Trigger Input (see page 7)

Use this jack to connect to a compatible processor or other product with a 3-32 Volt DC output.

C. Manual/Trigger Power Switch (see page 8)

When this switch is set to MANUAL, the Power button on the front panel acts as the main AC switch, turning the XA5180 on and off.

When the switch is set to TRIGGER, the XA5180 can be Turned on and off remotely by a device connected to the REMOTE TRIGGER jack. In this mode, the LED's on the front panel will glow yellow when the amplifier is in standby mode, and bright blue when powered on.

D. Speaker Outputs (see page 6-7)

Use these binding posts to connect the XA5180 to your speakers. The terminals can accept speaker cable with bare wire (solid or stranded), spade lugs, or banana plugs.

E. AC Fuse (see page 11)

Protects both the amplifier and your speakers from damage in case of a power surge.

F. Product Serial Number

Write this number in the space provided on page 3 for future reference.

G. AC Input (see page 9)

Use this input to connect the XA5180 to an AC power source with the supplied power cord (see precautions on page 2).

Connecting Your Amplifier

When making connections between any source components and the XA5180, or when making connections to any speaker, be certain that both the input devices and the amplifier are turned off. To assure that there will be no unwanted signal transients that can damage equipment or speakers, it is always best to unplug all equipment before making any connections. Modern electronic products often have a standby mode that may be activated even though the product may appear to be turned off.

Before you Begin

To assure that the signals received and produced by your XA5180 amplifier are carried to your speakers without loss of clarity or resolution, we recommend that you use high quality audio interconnect cables and speaker wire. There are many brands available. The choice may be influenced by the distance between your source device, amplifier and speakers, the type of speakers you use, personal preferences, or other factors.

Regardless of the brand or type of speaker wire selected, we recommend that you use a wire constructed of fine, multi-stranded copper with a gauge of 14 or less. Remember that in specifying wire, the lower the number, the thicker the cable. Wire with a gauge of 16 may be used for short runs of less than ten feet. We do not recommend that you use any wires with an AWG equivalent of 18 or higher due to the power loss and degradation in performance that will occur.

Connecting the amplifier to your source equipment is simple. Using high-quality audio interconnect cables, match the output channel designations on the rear of your processor (or other source equipment) to the input jacks on the rear panel of the XA5180 that have the same channel name.

When making connections with RCA type plugs on interconnect cables, make certain to gently, but firmly insert the plug into the jack. Never twist the RCA plug when plugging or unplugging. Loose connections can cause intermittent sound and may damage your speakers. The barrel assembly of some high quality RCA plugs may be very tight, and it is important to assure a proper connection between the interconnection cable and the input jack.

To connect the amplifier to your speaker a pair of binding posts is provided for each channel output. These posts will accept bare wire, spade lugs, or banana type plugs (when permitted by local safety agencies.)

Be sure to maintain the correct polarity between your Amplifier and speakers for proper phasing. When speaker phasing is correct, all speakers move in and out at the same time, preserving the imaging of the program material. Out-of-phase connections will result in some speaker cones moving in while others move out, causing indistinct or confused imaging, and muddled, cloudy sounds. To avoid incorrect phasing or polarity, be certain to use cable that has distinct markings, colors, stripes, wording, or grooves on each side of the speaker cable.

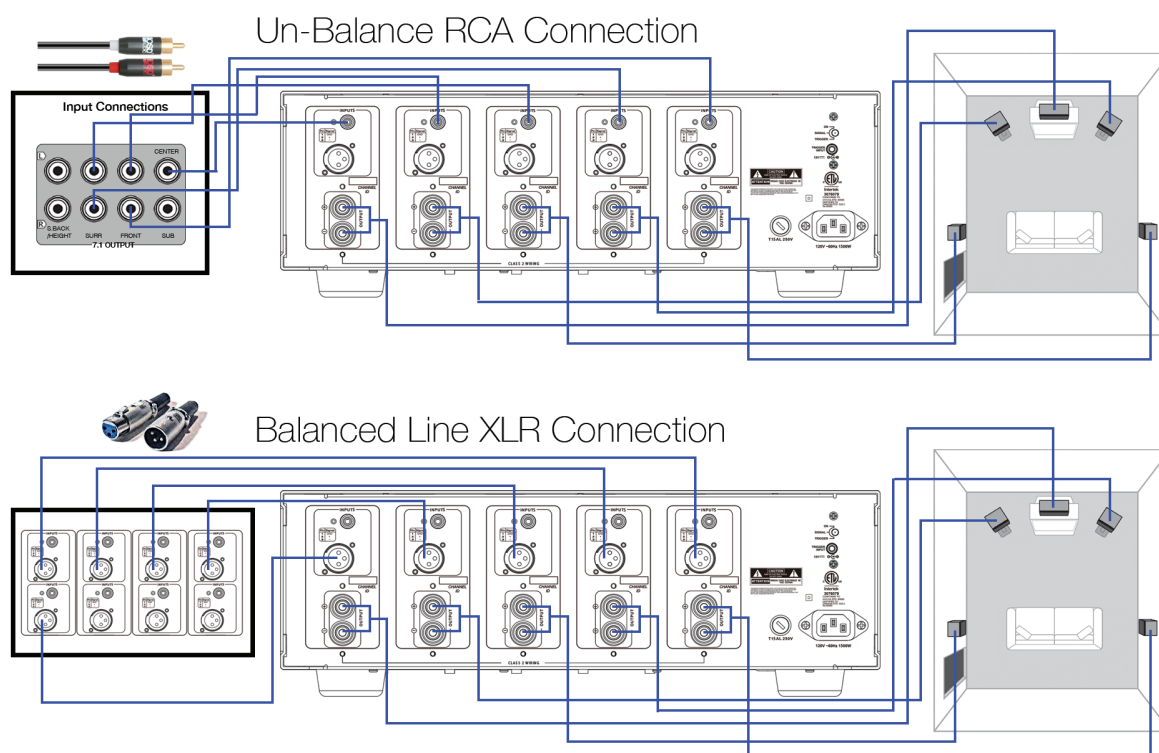
When making connections to the amplifier and speakers, adhere to a consistent pattern of using one side of the wire to the red terminals and the other side to the black terminals. If you are using speaker cable with markings on one side only, convention is to consider the marked side of the wire as the red, or positive (+) connection, and the non-marked side as the black or negative (-) connection.

► **IMPORTANT NOTE:** *Before attempting to plug any Jacks into any power amplifier verify that the power amplifier is turned off And/or disconnected from AC power.*

Failure to do so can potentially result in severe damage to your Amplifier and loudspeakers.

SPEAKER CONNECTION

XA5180 Speaker Connections



► To connect your speakers to the XA5180 using bare wire:

1. Strip approximately 1/2 to 3/4 inch (20mm) of insulation from the end of the speaker wire and carefully twist the strands together.
Be careful not to cut the individual strands or twist them off. For optimal performance all strands must be used.
2. Loosen the knob of the desired speaker output terminal on the rear panel of the XA5180.
Make sure all of the pass-through holes on the terminal are revealed.
3. Thread the twisted strands of the positive (+) and negative (-) speaker wire through the pass through holes of the speaker output terminal.
Make sure to maintain correct polarity as described above.
4. Once both connections are made, twist the caps back to secure the speaker wire.
Do not over tighten or use tools, as this may break the delicate wire strands and decrease system performance.
5. Repeat steps 1-4 for each speaker in your system.

► To connect your speakers to the XA5180 using spade lugs:

1. Loosen the knob of the desired speaker output terminal on the rear panel of the XA5180.
2. Place the positive (+) and negative (-) lugs between the plastic cap and the back of each terminal.
Make sure to maintain correct polarity as described above.
3. Twist the caps back to secure the spade lugs.
You only need to finger tighten to obtain positive contact.
4. Repeat steps 1-4 for each speaker in your system.

► To connect your speakers to the XA5180 using banana plugs:

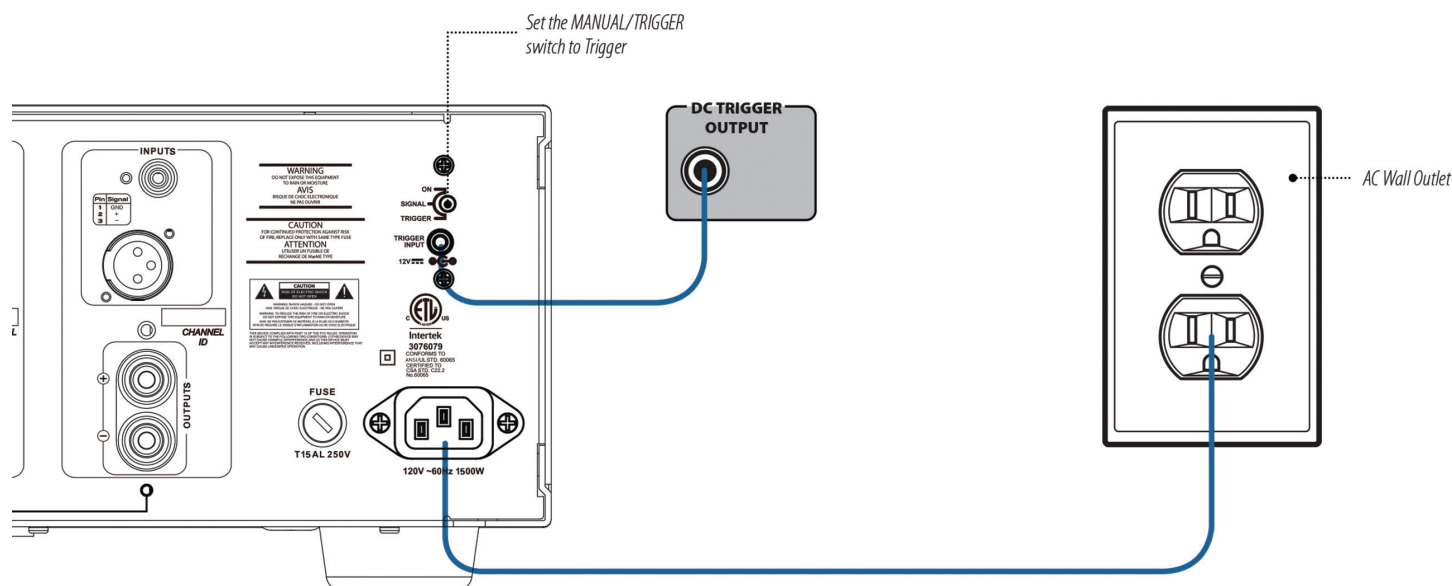
1. Tighten the knob of the desired speaker output terminal on the rear panel of the XA5180.
2. Insert the the positive (+) and negative (-) jacks colored screw cap on the binding post.
Make sure to maintain correct polarity as described above.
3. Repeat steps 1-4 for each speaker in your system.

Once all of the connections have been made to the rear panel of the XA5180, run the cables to the speaker locations. We recommend using similar wire lengths to each pair of speakers. For example, make certain that the wires connecting the left and right front speakers are the same length, even though one speaker may be physically closer to the amplifier than the other. Do not coil any excess cable, as this may create hum and frequency response variations in your system. Finally, connect the wires to the speakers, again being certain to observe proper polarity, connecting the positive (red) and negative (black) wires to the matching terminals on each speaker.

► While most speaker manufacturers follow the industry standard of using red terminals for positive connections and black terminals for negative, some may not. To assure proper phase connections, and optimal performance, consult the markings on your speaker terminals, or the speaker's manual to verify polarity. If you do not know the polarity of your speaker, consult the speaker's manufacturer for further information

REMOTE TRIGGER CONNECTION

Remote Trigger Connections



The XA5180 features a built-in system that automatically turns the amplifier on and off when another device in the system (surround processor, preamplifier, AV receiver, etc.) is switched on or off.

To use another device with a 12 volt trigger output jack to automatically power on the XA5180:

1. Set the MANUAL/TRIGGER switch on the rear panel of the XA5180 to the Trigger position.
2. Connect a 3.5mm mono mini-plug from the trigger-output jack of the source device to the REMOTE TRIGGER jack on the amplifier's rear panel.
When the switch is set to TRIGGER, the XA5180 goes into standby mode and the front panel LED's glow yellow. When the connected device is turned on, the status LED's glow bright blue.

If you set the MANUAL/TRIGGER switch to Trigger, but don't connect the XA5180 to another device, the status LED's will be bright blue, but the amplifier will not respond if you press the power button.

If your processor or receiver does not have a dedicated trigger jack, it is still possible to activate the unit for automatic turn on when a switched outlet is available on the rear of the source device. You will need a small AC to DC power converter, capable of delivering a 6 to 12 volt DC signal. The DC voltage should terminate in a standard 3.5mm type mini plug. This type of converter may be obtained as a Power Adapter from many electronics retailers.

► **To use an external AC to DC power converter to automatically power on the XA5180**

1. Plug the AC adapter into a switched outlet that will be activated when you wish to have the amplifier turn on.
This may be the switched outlet at the rear of an AC receiver or other audio equipment.
2. Connect a 3.5mm mini-plug from the AC adapter to the REMOTE TRIGGER jack on the back panel of the amplifier.
The amplifier will now turn on and off automatically, based on the status of the controlling device.

POWER CONNECTION

Power Connections

Once all audio and system connections have been made, connect the supplied power cord to the AC Input on the rear panel of the XA5180 and an AC power source.

Please make certain that the amplifier is turned off and that the device connected to the remote trigger input is off when plugging the power cord into an AC outlet.

► **CAUTION:** Do not plug the XA5180 directly into the "Switched Accessory" outlet of another device! These outlets are intended for use with low current draw products having a low current draw, such as tuners, CD players or cassette decks. These outlets cannot handle the high current draw of a power Amplifier and using them for a power amplifier is a significant safety hazard.

► It is not recommended that you connect other power Amplifiers or products with a high current draw, to the same AC power circuit as the XA5180, unless they are used with the remote power turn on and sequencing system. The simultaneous turn-on of multiple amplifiers on the same circuit may cause circuit breakers to trip, due to the high current draw.

OVERVIEW

Amplifier Operation and Maintenance

POWER: The amplifier is ON and working normally.

STANDBY: The amplifier channel is in standby mode.

No audio will be broadcast to the speakers.

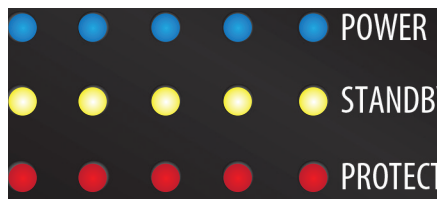
PROTECTION: The amplifier has automatically detected a problem and has protected itself from damage. Turn the unit off, unplug the power cord and check all your speaker wires for possible shorts before attempting to power the amplifier back on.

Front Panel Status LEDs

Power: Bright Blue

Standby: Yellow

Protection: Red



Before you Begin

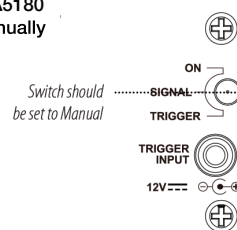
When operating the XA5180 you should not place another device directly on top of the amplifier as this will block the ventilation slots on the top of the unit and cause the device to overheat. We suggest leaving at least 6 inches of space above the amplifier for proper operation.

Output Settings

All volume and level adjustments are made at your preamp, controller or surround processor. To assure proper sound field imaging, it is always a good idea to re-set the output levels of the channels on your processor when using the amplifier for the first time. The circuitry in your new amplifier may be different from your previous one, and by checking the output levels you will make certain that the processor, amplifier and speakers are properly matched.

MANUAL OPERATION

Turning the XA5180 on and off manually



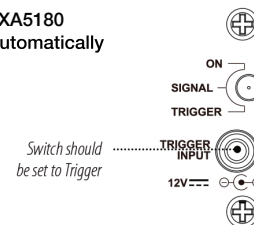
Turning the amplifier on



Press the front panel **POWER** button to turn the amplifier ON

AUTOMATIC OPERATION

Turning the XA5180 on and off automatically



Turning the amplifier off



Press the front panel **POWER** button to turn the amplifier OFF

To use the XA5180 in manual mode the **MANUAL/TRIGGER** switch on the rear panel should be set to Manual as described on page 8.

► To power the XA5180 on and off using the front panel Power button:

1. To turn the amplifier on, press the **Power** button on the front panel.

There will be a short pause from the time the power is turned on until power is applied to the speakers. This is intentional, and protects your speakers from damage while the amplifier stabilizes. You may also hear a relay click during start up. This is also normal.

2. To turn the amplifier off, press the **Power** button on the front panel again.

To power the XA5180 on and off automatically using another device, the **MANUAL/TRIGGER** switch on the rear panel should be set to Trigger and the 3.5mm cable should be inserted to the XA5180 and the source device as described on page 8.

The Front Panel Status LEDs will glow yellow for Standby mode.

► To power the XA5180 on and off automatically using the **REMOTE TRIGGER** connection from another controlling device:

1. **Turn the controlling device on.**
Status LEDs will glow blue.
The XA5180 will automatically turn on after a short pause. This is intentional, and protects your speakers from damage while the amplifier stabilizes. You may also hear a relay click during start up. This is also normal.
2. **Turn the controlling device off.**
The XA5180 will return to Standby mode and the front panel LEDs will glow yellow.

You can also use the **Power** button on the front panel of the XA5180 to turn the amplifier off or return it to standby.



Mode. Using the amplifier's front panel Power button will Not affect the correct operation of the controlling device.

To power the XA5180 on and off manually when the REMOTE TRIGGER cable is connected to another controlling device and the rear panel switch is set to Trigger:

1. To turn the amplifier off press the Power button on the front panel. This will turn off the master power to the XA5180, the blue light will not be lit, and amplifier will no longer be able to be turned on by the controlling device. The amplifier will remain off if you turn the controlling device off after powering down the XA5180 manually.
2. To turn the amplifier on, press the Power button on the front panel.

If the controlling device is off, this will return the amp to standby mode, and the blue ring will glow dimly. If the controlling device is on, the blue ring will glow brightly.

The amplifier will remain on if you turn the controlling device on after powering up the XA5180 manually.

WHEN YOU ARE AWAY

If you won't be using your system for an extended period of time, it is always a good idea to turn the unit off using the amplifier's front panel Power button and disconnecting the AC power cord. This will prevent the XA5180 from accidentally turning on during your absence.

CLEANING

If the unit becomes dirty, wipe with a clean, soft, dry cloth. If Necessary, first use a slightly dampened soft cloth with mild soapy water, then a fresh cloth dampened with clean water. Wipe dry immediately with a dry cloth. NEVER use benzene, thinner, alcohol or any other volatile cleaning agent. Do not use abrasive cleaners, as they may damage the finish of the metal parts. Avoid spraying insecticide, waxes, polishing agents, or any aerosol product near the unit.

TROUBLESHOOTING AND SERVICE INFORMATION

Your XA5180 Power Amplifier is designed for trouble free operation. If you follow the instructions in this manual you should enjoy many years of high quality listening enjoyment. However, as with any sophisticated electronic device, there may be occasional problems upon initial installation, or during the life of the unit. The items on this list are a brief guide to

the minor problems that you may be able to correct yourself. If these solutions do not rectify a problem, or if the problem persists, contact us for assistance. The XA5180 does not contain any user serviceable parts. If you suspect a problem that may require service assistance, contact us at www.osdaudio.com.

It is important that any repairs be carried out only by Optimal Speaker Design Service Department. This will assure proper service and preserve the protection of your Limited Warranty. Keep your sales slip or receipt in a safe place with this manual so that it will be available to verify the purchase date, should you experience a problem covered by our warranty.

CLEANING	POSSIBLE CAUSE	SOLUTION OPTION
Amplifier will not turn on when the front panel Power button is pressed	MANUAL/TRIGGER switch set incorrectly No AC power Power strip or conditioner turned off External fuse may be blown	Make certain MANUAL/TRIGGER switch is set to Manual. Make certain AC power cord is plugged into a live outlet. Make certain power strip or power conditioner is turned on, if applicable. Check rear panel fuse and replace if necessary. If the fuse continues to blow, please contact Optimal Speaker Design Customer Service.
Amplifier will not turn on when controlling device is turned on	MANUAL/TRIGGER switch set incorrectly Remote trigger cable not properly connected No AC power Power strip or conditioner turned off	Make certain MANUAL/TRIGGER switch is set to Trigger. Verify connection of trigger cable at both ends Make certain AC power cord is plugged into a live outlet. Make certain power strip or power conditioner is turned on, if applicable.
Amplifier turn on, but no audio from one or more channels	Input plugs not connected to proper jack or are loose Speakers not connected properly	Check input connections. Check speaker connections at amp and speaker.
Front panel light glows red when turned on	One or more channels may have gone into protection mode One or more channels may not be functioning properly	Turn the unit off and wait a 10-15 minutes to see if the protection circuit has re-set the unit. If the protection was set off because of thermal overload, it may take up to 30 minutes for the unit to cool down and reset the front LED. The unit should be cool to the touch when its ready to be tuned back on. If after waiting the light does not glow blue again, please call Optimal Speaker Design customer service.
Audio levels differ	Improper settings or output levels from the processor or controller	Check the settings on your preamp, processor or controller.
Audio plays, then cuts off	Amplifier shorted	See suggestions in the section titled "Protection Mode" on the next page.
Audible hum, or a discernable low frequency noise	Possible ground loop situation	See suggestions in the section titled "A Few Words About Hum and Noise" on the next page.

A FEW WORDS ABOUT HUM AND NOISE

Audible hum, or a discernable low frequency noise, is one of the most common problems in audio/video systems. This hum, which may be present even when the volume is at a low level or when the power is off, is usually caused by a problem known as "ground loops." A ground loop occurs when there is a difference in ground voltages between two or more components that are connected electrically. This, in turn, creates multiple current paths and causes the low-level noise, or hum.

The growing sophistication of home theater systems, and the increased number of components used to create these systems has dramatically increased the potential for the possibility of ground loops. While it is natural to suspect that the components in your system are the cause of the hum, in many cases the cause may be due to other conditions. In particular, cable TV connections from outside the house have become a major source of hum.

In most cases, one of the following suggestions should help you to solve a hum problem in your system. Please try these steps in the sequence shown, proceeding from one step to the next if the prior suggestion does not eliminate the problem.

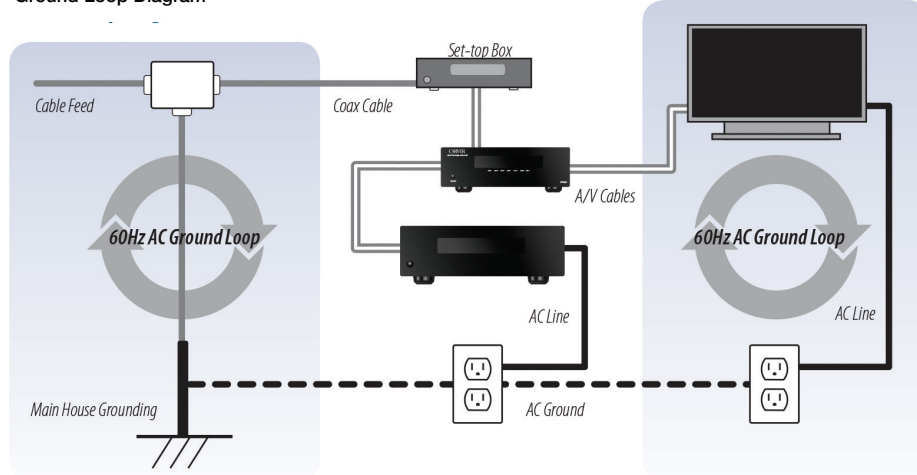
Suggestion #1

To determine if a cable TV connection is responsible for the hum, first turn all component off. Disconnect the Cable TV feed to your system at the first place where it connects to your components. Alternatively, disconnect the cable TV wire where it is connected at the wall outlet. Turn your system back on, and listen if the hum has disappeared. If removing the cable TV feed has eliminated the hum, you will need to insert a Ground Loop Isolator before reconnecting the cable TV feed, or contact your cable TV operator to see if they can better isolate your cable feed.

Suggestion #2

Turn off all components in your system, and then disconnect the input cables at the amplifier. Turn the amplifier back on, and see if the hum is still present. If the hum disappears, the fault may be in the input cables used. Try replacing them with cables that have better shielding, and make certain that the input cables are not running on top of any AC power cords. Change the cables one at a time to determine if one, or all cables is responsive. If the hum disappears when the input cables are disconnected, but returns after the cables are changed and the system re-connected, the problem may be caused by your processor, receiver or preamplifier.

Ground Loop Diagram



Suggestion #3

Ground loop problems may also be caused by poor grounding of the electrical system in your home, particularly when there are multiple components with three prong, grounded, power cords. Try unplugging these components one at a time, and see if one or all of them is causing the problem. The ultimate solution to this type of problem is to re-wire your house with an isolated, star type grounding configuration. We recognize, however, that this may be impractical and expensive. In some cases, the use of an approved AC Power Isolation Transformer of sufficient capacity may solve this problem.

Suggestion #4

Hum may also be caused by faulty earth grounds in your home's electrical system. In the past, cold water pipes were often used for the earth ground, so it is important to make sure that your ground connection is still valid and has not become loose or corroded. The cold water pipe method may no longer be valid in some locations due to requirements that the water meter be isolated from the water mains with a length of PVC pipe, thus interrupting the ground circuit. The safest, and most reliable, approach may be to provide your own ground.

This can be accomplished by having a licensed electrician drive at least five feet of copper-jacketed steel grounding rod into the earth, and using that for your grounding connection.

Suggestion #5

If you have hum in your video display device (bars that roll up through image at 12-14 second intervals), this may be related to hum you also experience in your audio system. The previous suggestion tips may help with this also. If not, try isolating the ground in the projectors video signal cable with a base-band video isolation transformer, such as the Jensen VB-1BB.

If the hum persists after all of the above suggestions have been tried, contact the Optimal Spaeker Design customer service department for assistance.

► **WARNING:** If you suspect that the grounding system in your home's electrical wiring is causing the hum problem, it is important that you do not make any changes to the wiring yourself. Only a licensed electrician should make any changes to household wiring, and they must be made in full compliance with all local building, safety and electrical codes.

PROTECTION MODE

Under some conditions, such as a shorted speaker wire, DC voltage on an input connection or thermal overload, the XA5180 will place itself in a protect mode to prevent damage to the amplifier. When this happens the front panel light will glow red and the amplifier will mute to protect both the amplifier and speakers from damage.

Should this occur, IMMEDIATELY turn the unit off, using the front panel Power button, and disconnect the AC power cord. Examine all speaker connections to make certain that there are no shorts. Turn the unit back on. If the unit continues to go into the protect mode, contact us for assistance.

MAIN AMPLIFIER FUSE

The XA5180 uses an external fuse to protect both the amplifier and your speaker from damage. In the event that a fuse replacement is required, be certain that a fuse of the original rating is used. If a fuse continues to fail, your unit may have developed a fault. In this event, please contact us for assistance.

WARNING: Always turn the amplifier off and unplug the power cord from the AC Power before replacing the fuse.

SPECIFICATIONS

Power Output

All Channels Driven	5	4	3
8-Ohm	120 Watts	160 Watts	200 Watts
4-Ohm	180 Watts	220 Watts	260 Watts

Frequency Response 20Hz -20kHz +/- 0.5 dB at rated output (120W)

Total Harmonic Distortion Less than 0.02% at rated output (THD) (120W), all frequencies, less than 0.01% at 1kHz

Intermodulation Distortion (IMD) Less than 0.05% from 250mV to output full rated output (120W)

Filter Capacitance Four 6800µF Caps per channel

Number of Output Devices	5 per channel
Power Bandwidth	5Hz - 54kHz +/-3 dB
Damping Factor	Greater than 105 from 10Hz to 400Hz
Crosstalk	Greater than -70dB from 20Hz - 20kHz
Gain	Voltage gain of 29dB
Input Impedance	40k ohms
Input Sensitivity	1.00 Volt
Remote Trigger Voltage	9 - 24 Volts DC at 5 milliamperes or greater

GENERAL

Dimensions including feet (HxWxD) 6.0" x 17.0" x 16.75"

Weight 50 lbs

Power Requirements 120VAC, ±3%, - 60Hz
1500 watts maximum

WARRANTY & REPAIR

All OSD AUDIO electronics have (2) year Limited Warranty against defects in materials and workmanship. Proof of purchase must accompany all claims. During the warranty period OSD AUDIO will replace any defective part and correct any defect in workmanship without charge for either parts or labor.

OSD AUDIO may replace returned electronics with a product of equal value and performance. In such cases, some modifications to the mounting may be necessary and are not OSD AUDIO's responsibility.

Damage to or destruction of components due to application of excessive power voids the warranty on those parts. In these cases, repairs will be made on the basis of the retail value of the parts and labor. To return for repairs, you must email customer service at RMA@audiogeargroup.com for a Returned Merchandise Authorization (RMA) number then the unit must be shipped to OSD AUDIO at the owner's expense, along with a note explaining the nature of service required. Be sure to pack the product(s) in a corrugated container with at least 3 inches of resilient material to protect the unit from damage in transit.

This Warranty Does Not Cover: Damage caused by abuse, accident, misuse, negligence, or improper operation (installation). Any products that have been altered or modified. Any product whose identifying number of decal, serial #, etc. has been altered, defaced or removed. Normal wear and maintenance.



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