

Savoy™

Home Theater Power Amplifier

Professional Installer's Consciousness Guide

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AudioControl®

For those who consider perfection possible®
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Phone 425-775-8461 • Fax 425-778-3166
www.audiocontrol.com

Savoy™

Home Theater Power Amplifier

Professional Installer's
Consciousness Guide

AudioControl®

Important Information

Owner _____

Date Purchased _____

Serial Number _____

Contents

Congratulations!	1
Product Highlights	2
Guided Tour	
Front Panel	3
Rear Panel	4
Installation	5
Troubleshooting	10
Warranty	12
Block Diagram	14
Specifications	15

Congratulations!

You are now installing a component capable of dramatically improving the performance of almost any home theater system. The Savoy is a U.S. designed and manufactured theater amplifier from AudioControl that will provide years of trouble-free enjoyment for your home theater system.

This high quality home theater power amplifier is made by the only electronics company that considers "Perfection Possible." The engineers at AudioControl have more than half a century of experience with amplifier design. They know how to build a great sounding amplifier that will stand the test of time. AudioControl equalizers, signal processors and audio analyzers have been standard fixtures in performance theater systems for over 25 years, and their professional sound division designed and still sells the most popular one-third octave real time analyzer in the world, the SA-3050 series.

AudioControl's passion for high quality, meticulous attention to detail and pro sound heritage shows itself in dozens of awards for design, product performance, and customer service. Now, as it has always been, AudioControl's greatest satisfaction comes from their reputation for sonic excellence and reliability among people just like you throughout the world.

This manual is designed to help you get everything you can out of your new Savoy amplifier, and we don't mean parting it out! So even though you're dying to hear the pristine sonics of the Savoy, please take a few minutes to slog through our not-so-weighty prose and learn how to get the most from your AudioControl home theater power amplifier.

Anything as capable as this amplifier deserves all the explanation it can get.

Product Highlights

Pristine Sonics, Authoritative Power, and Legendary Reliability...

The Savoy amplifier has been designed from the ground up to provide pristine sonics, authoritative power, and legendary reliability. This ensures that you will be able to enjoy amazing sound at almost any level for years to come. This is the AudioControl commitment, and the reason you've selected this amazing amplifier.

Class H Design: Most amplifiers have one speed: all on. That means that during most playback, up to 90% of the amp's power is just going up in heat. The Class H design takes care of this problem by automatically and intelligently adjusting the power supply to fit the power demands of the moment. The result is much cooler operation without the need for bulky heat-sinks or fans.

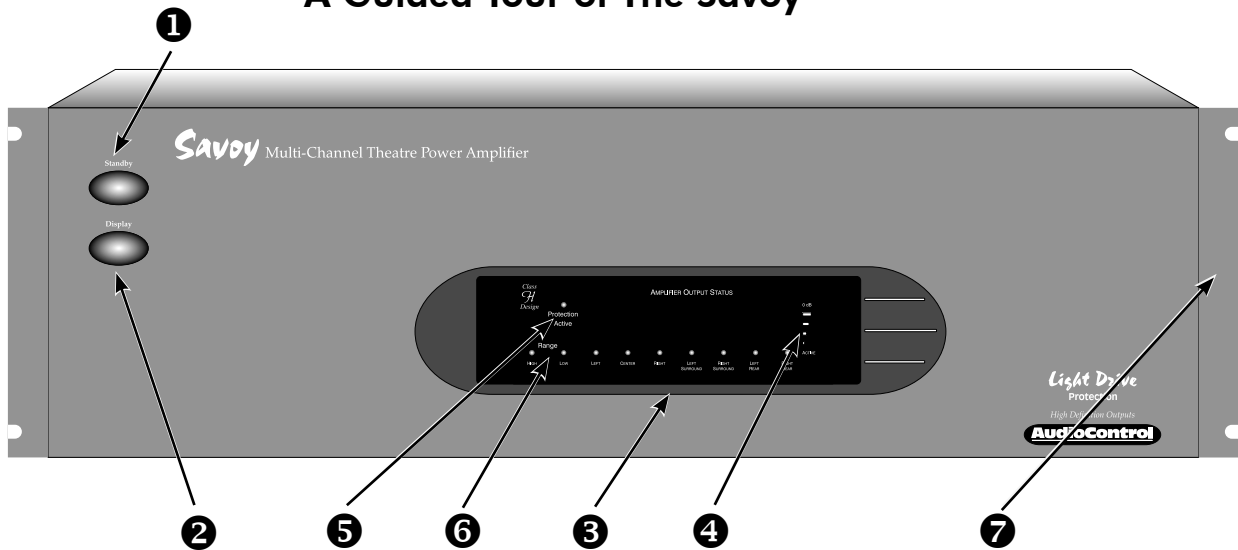
LightDrive Protection Circuitry: The *LightDrive* protection circuitry defends this amplifier and your speakers against clipping, distortion, damage, and annoying teenage beach party movies, even if the movie festival lasts all weekend. Each channel is independently protected, so a problem in one channel will not affect the rest of the system.

Bulletproof Reliability: AudioControl amplifiers are designed with performance and durability in mind. Every technology integrated and production specification employed add to the Savoy's longevity and audio enjoyment. For this reason, consumers have long referred to AudioControl amplifiers as "Bulletproof." It is highly likely that this will be the longest lasting component in your home theater.

Five-Year Warranty: AudioControl amplifiers are built to such high standards that each amplifier is backed by a five-year parts and labor warranty. Why five years? Because products that are two-and-a-half times better than the competition deserve a warranty that reflects it.

Designed and Manufactured In The Pacific Northwest Rainforest: Your Savoy began its existence at the AudioControl factory in Mountlake Terrace, Washington, a few miles north of Seattle. Here, AudioControl builds precision test instruments, equalizers and analyzers along with a totally awesome line of car stereo components. AudioControl started in 1977 and has won so many audio industry awards for design and engineering excellence that the reception room wall is starting to sag (reinforcements are currently being added to prepare for the additional awards that are sure to be given in the coming years).

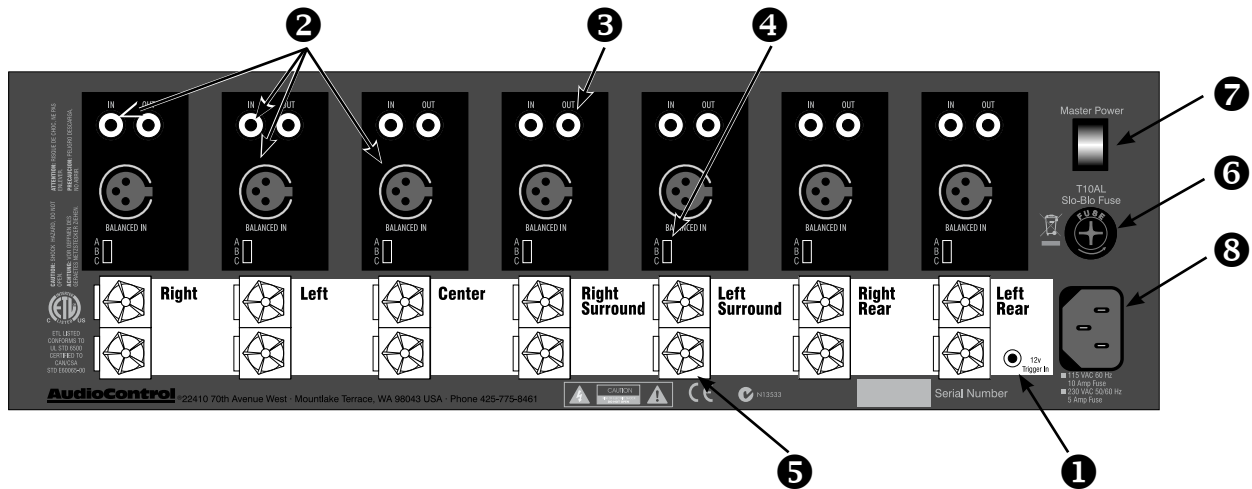
A Guided Tour of The Savoy



Front Panel

- 1 Standby Button** – The Standby button manually toggles the Savoy between normal operation and standby (when “Master Power” switch located on the rear panel is ON). It will override the rear panel remote 12 volt trigger, but normal operation will resume when the trigger input is cycled.
- 2 Display Button** – The display button allows you to toggle between three display settings for the Channel Level Indicators on the front of the Savoy. “Off” will turn off the channel level indicators. “Low” (as indicated by the Range Setting LED) allows the Channel Level Indicators to dance when playing at moderate listening levels (think Elton John concert). “High” (as indicated by the Range Setting LED) allows the Channel Level Indicators to dance when the Savoy is playing at high levels (think Metallica).
- 3 Channel Status LEDs** – These blue LED’s indicate that the associated channel is active and functioning properly.
- 4 Channel Level Indicators** – Indicate activity and power output for each channel.
- 5 Protection Indicators** – This red LED illuminates to indicate that a channel has gone into protection mode.
- 6 Range Setting LEDs** – There are two range settings that regulate movement of the Channel Level Indicators (See “Display Button” operation). “Low” will provide more LED dancing action at moderate listening levels while “High” keeps the LED dance floor clear until volumes reach the upper echelon. Neither option effects amplifier performance.
- 7 Rack Mounting** (Optional) – Allows the Savoy to be mounted in an equipment rack.

Savoy™
OPERATOR'S
MANUAL



Rear Panel

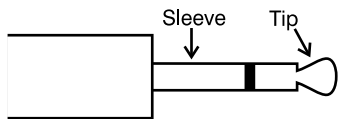


Figure 1. 1/8" mono jack

- 1 Remote Power Control** – The Remote Power Control is an 1/8" mono jack plug connector that provides remote turn-on of the Savoy (see Figure 1). The sleeve of the pin is the ground (-) and the tip is active (+).
- 2 Line-level Input** – The Savoy features both unbalanced RCA and balanced XLR inputs to connect your preamplifier's outputs. Any standard line-level audio signal can be connected to these inputs. DO NOT connect both the balanced and unbalanced inputs of a single channel.
- 3 Line-level Output** – The Savoy offers unbalanced RCA line-level outputs that allow you to send the signal on to a second amplifier for those systems that are arranged in a bi-amp design.
- 4 Sensitivity Switch** – The Savoy provides three input sensitivity settings to level match the inputs of the Savoy with the outputs of your theater processor. AudioControl recommends setting "C" because it provides the greatest protection and noise reduction. Setting "B" is the THX™ standard (consult your theater processor or source unit manual to determine if output voltage is THX rated). Setting A is only used in situations where other manufacture's pre-amplifiers with higher gain are a part of the system.
- 5 Speaker Outputs** – These 5-way binding posts are solid construction, gold plated, high-current terminal blocks that will accept large gauge speaker wire, pin, fork, and standard 0.75" spaced banana plugs.
- 6 AC Power Fuse** – The Savoy is designed with several layers of protection circuitry. This power fuse is here just in case something really awful goes wrong.
- 7 Master Power Switch** – This switch shuts off the main AC power. Normally the only time you need to turn the master power switch off is if the system is going to be shut down for an extended period of time.
- 8 Power Plug** – The Savoy accepts any IEC Power Chord (included). The Savoy draws an average of 700 Watts with typical source material. Make certain that it is plugged directly into the wall outlet or a power strip with sufficient power handling capabilities. Since the Savoy has remote power switching, you can plug the unit into an outlet that is always active.

Installation Guide

A performance theater begins to take shape the moment you first pull this unit from the box. To make the installation of the Savoy as simple and easy as possible, please follow these steps to ensure amazing sound performance for years to come.

As you remove the Savoy from the box, check the unit for damage that may have occurred during shipping. AudioControl packs 'em pretty securely, but it's a vicious world out there and anything can happen between our factory in the Pacific Northwest and your installation.

Paperwork

Yes, filling out the warranty registration card is about as exciting as cleaning out your sock drawer, but AudioControl would definitely like the card back after you've hooked up the Savoy amplifier and played with it awhile. AudioControl employees read every card, and use the feedback you provide when designing new products or upgrading product features.

Next, make a note of the serial number and keep it in a safe place. (Notice the space provided on the inside cover of this manual.) In the unlikely event that the Savoy amplifier ever needs servicing or an insurance claim needs to be filed, the serial number is readily available.

Placement

The AudioControl Savoy amplifier is a very cool running amplifier thanks to its Class H topology. However, the Savoy does need some breathing room to operate properly. Make certain that the air vents on the top and bottom of the amplifier casing are not blocked and have at least ½" of air space. It is also wise to avoid placing heat sensitive components such as CD or DVD players directly on top of the Savoy.

Power

Before simply plugging the Savoy power cord into an outlet, give consideration to how the Savoy will be integrated into the system. The 3-pronged power cord should be connected to a constant source of power with a solid ground. Using a switched power source can cause complications in system integration, especially when the Savoy is activated by an RF signal.

To eliminate ground loop issues, plug all of the power for the system into a commonly grounded circuit. A surge protector can also be a good idea.

If you elect to draw power from a switched outlet in your system, you will need to verify that the Savoy can handle the power rating. Also, please do not cut off the ground pin on the power connector. If you need to plug it into a two-prong outlet, use a correctly installed ground adapter.

Physical Installation

For your Savoy amplifier to operate properly, it needs to be installed correctly. To do so, you will need the following:

1. Savoy amplifier.
2. Source unit (most commonly a surround processor or pre-amp, such as the AudioControl Maestro or Maestro M2).
3. Audio cables to carry the signal from the source unit to the Savoy amplifier (Either RCA or XLR).
4. Speaker wire to carry the power from the Savoy amplifier to the speakers.
5. Rack mounts (when mounting the Savoy in an equipment rack)
– Sold Separately.
6. Ears to enjoy the pristine sonics the Savoy amplifier will produce!

Remote Power Control

The Savoy amplifier has three levels of power control:

1. Main AC Power Switch: This is the master power control for the Savoy, located on the rear panel. It must be switched ON for the amplifier to function. The Remote Power Control will only power the amplifier on if the Main AC Power Switch is set to ON. It is also wise to wait until installation is complete before supplying power.
2. Remote Power Control: This removable $\frac{1}{8}$ " mono jack connector serves as the interface between any external control and the Savoy amplifier. If you are not using an external control you DO NOT need to connect power to this plug. See Figure 2.
3. Front Panel Standby Button: The Standby button toggles the Savoy amplifier in and out of standby mode. When the Savoy is in standby mode, the light in the button will illuminate. While in standby, no signal is being sent from the amplifier to the speakers (though there is still power to the Savoy amplifier).

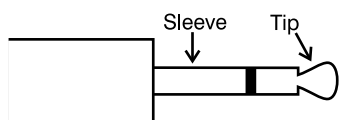


Figure 2. $\frac{1}{8}$ " mono jack

Connecting the Audio

1. Turn off ALL components before making any connections.
2. When making connections, label the cables to more easily distinguish each channel and decrease the chances of improperly wiring your system.

Be consistent with your labeling throughout the system. This not only makes future adjustments easier on you, but also anyone else who may work on the system after you. Also, remember that the Savoy offers both line-level inputs and outputs via unbalanced RCA jacks. It may seem elementary, but be certain you are connecting your input signal to the input jack (this is in here for the other guy, not you of course!)

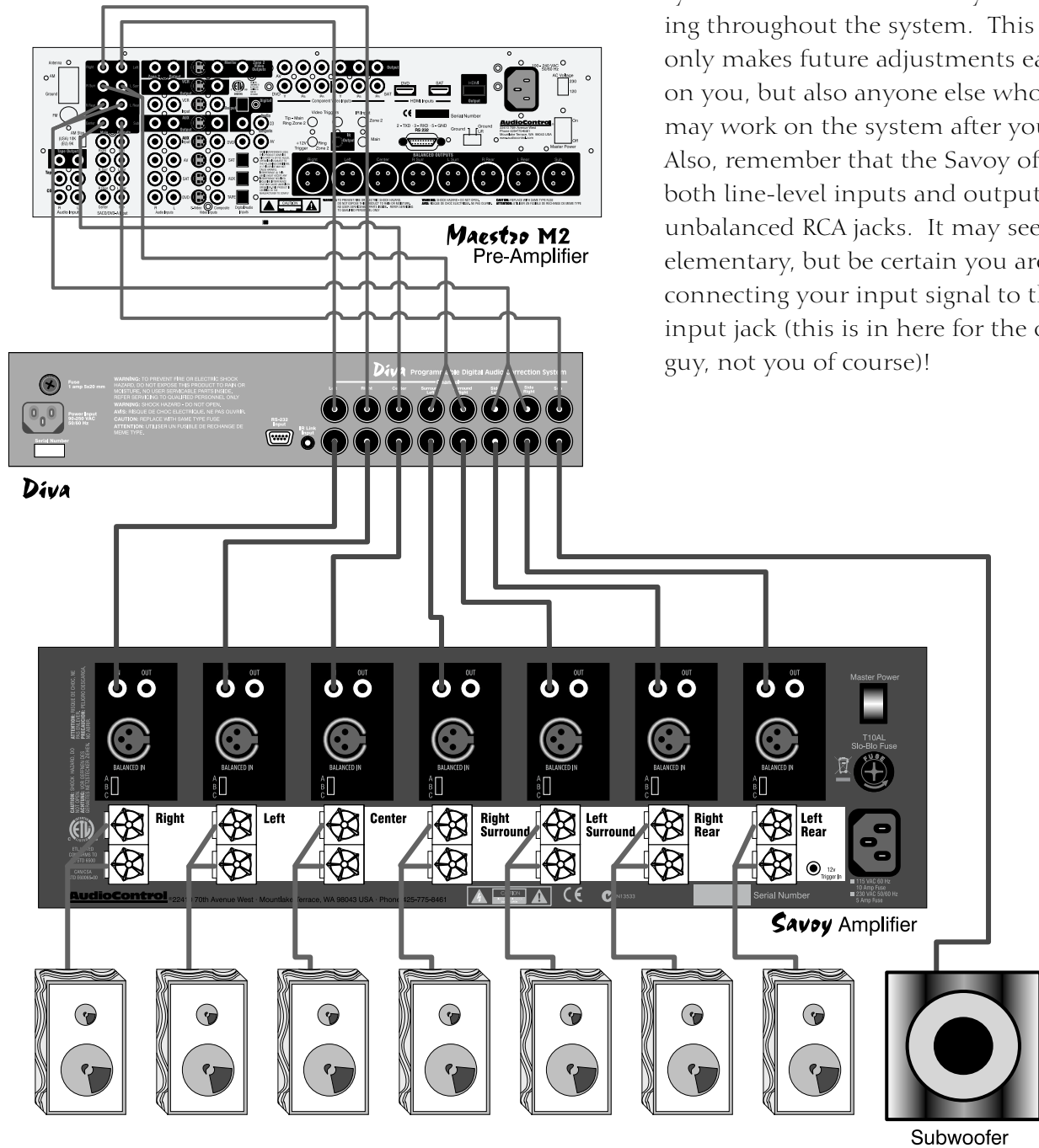


Figure 3. Example system using Maestro M2 pre-amplifier, Diva room correction processor and Savoy amplifier.

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3. Keep cables carrying high voltage (power cables) away from those cables carrying low voltage (audio cables) to reduce the possibility of interference and hum, which will effect sound quality. This is especially important if you are bundling cables to keep the install organized and neat.
 4. Use quality interconnect cables, as signal loss and interference cannot be overcome by the Savoy's many features. The Savoy is designed to increase the strength of the signal it is provided and direct it out to the speakers. If you provide a poor signal, the Savoy may only make it a louder poor signal.
 5. When running cables further than 20 feet, it is wise to use Balanced XLR audio interconnect cables (provided your source unit has Balanced XLR outputs). Balanced XLR cables provide better noise rejection than unbalanced RCA cables due to the way they carry the signal. If your source unit does not have Balanced XLR outputs (you won't have this problem if you're using a Maestro M2 pre-amplifier), it would be worthwhile to consider using the AudioControl BLD-10 and BLR-10 (see Appendix). These pieces allow you to transform an unbalanced RCA signal to a Balanced XLR signal that can be sent up to 1000' over standard Cat-5 cable.

Connecting the Speakers

It may sound as though we are repeating ourselves, but the process for connecting the speakers is very similar to connecting the audio (discussed previously), and many of the same steps should be followed.

1. Turn off ALL components before making any connections.
2. When making connections, label the cables to more easily distinguish each channel and decrease the chances of improperly wiring your system. Be consistent throughout the system. This will not only make it easier on you if you need to make an adjustment, but also in the case that someone else works on the system after you.
3. Use quality speaker cables, preferably shielded, as signal loss and interference cannot be overcome by the Savoy's many features. The Savoy is designed to increase the strength of the signal it is provided and direct it out to the speakers. Signal loss or interference picked-up between the Savoy and the speakers cannot be compensated for in the Savoy.

SPEAKER WIRE RESISTANCE

Wire Gauge versus Run Length

	25'	50'
24 GA	1.3 Ω	2.6 Ω
22 GA	0.8 Ω	1.6 Ω
20 GA	0.5 Ω	1.0 Ω
18 GA	0.3 Ω	0.6 Ω
16 GA	0.2 Ω	0.4 Ω
14 GA	0.1 Ω	0.25 Ω
12 GA	0.08 Ω	0.16 Ω

Figure 5

We also recommend that you carefully select the gauge and length of the speaker wire, as these two variables will effect the speaker impedance load presented to the Savoy amplifier. In Figure 5, the table shows the impact wire resistance will have, even in shorter lengths.

A common practice among system designers is the 5% rule. This rule states that the wire resistance should not exceed 5% of the speaker's minimum resistance. This keeps the volume level change due to line losses to less than 0.5dB. As an example, on an 8 ohm speaker, the wire resistance should be less than 0.4 ohms ($5\% \times 8 = 0.4$). Use Figure 5 to determine the proper wire gauge for your application.

4. Select the proper speaker cable connectors to connect your speakers to the Savoy. The 5-way binding posts on the Savoy will allow you to use a number of cable connectors including pin, fork, banana plugs, or even bare wire (see diagram). As in any relationship, a deep and solid connection will join your speakers and Savoy amplifier "until death do them part!"
5. Non-uniform speaker polarity within a speaker system will drastically effect the sound. Properly connecting the positive (+) and negative (-) terminals of the Savoy to the correlating input on the speaker will ensure correct polarity among all the speakers. This is accomplished by verifying the markings on the speaker wire (they are often color-coded, labeled on the wire jacket, or distinguished by a ribbing on the wire jacket) and remaining consistent throughout the system.

Your Savoy amplifier is now completely installed, and power can be supplied once the system is fully operational.

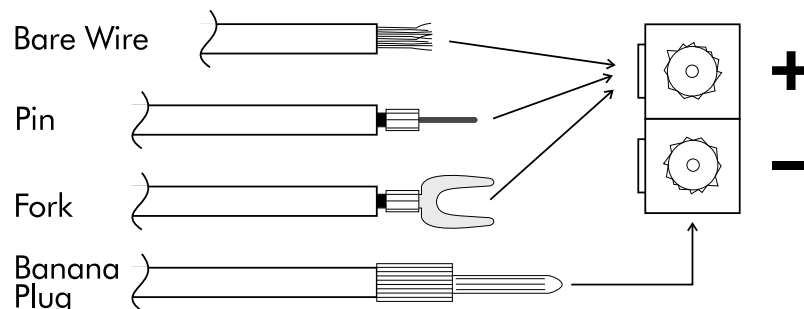
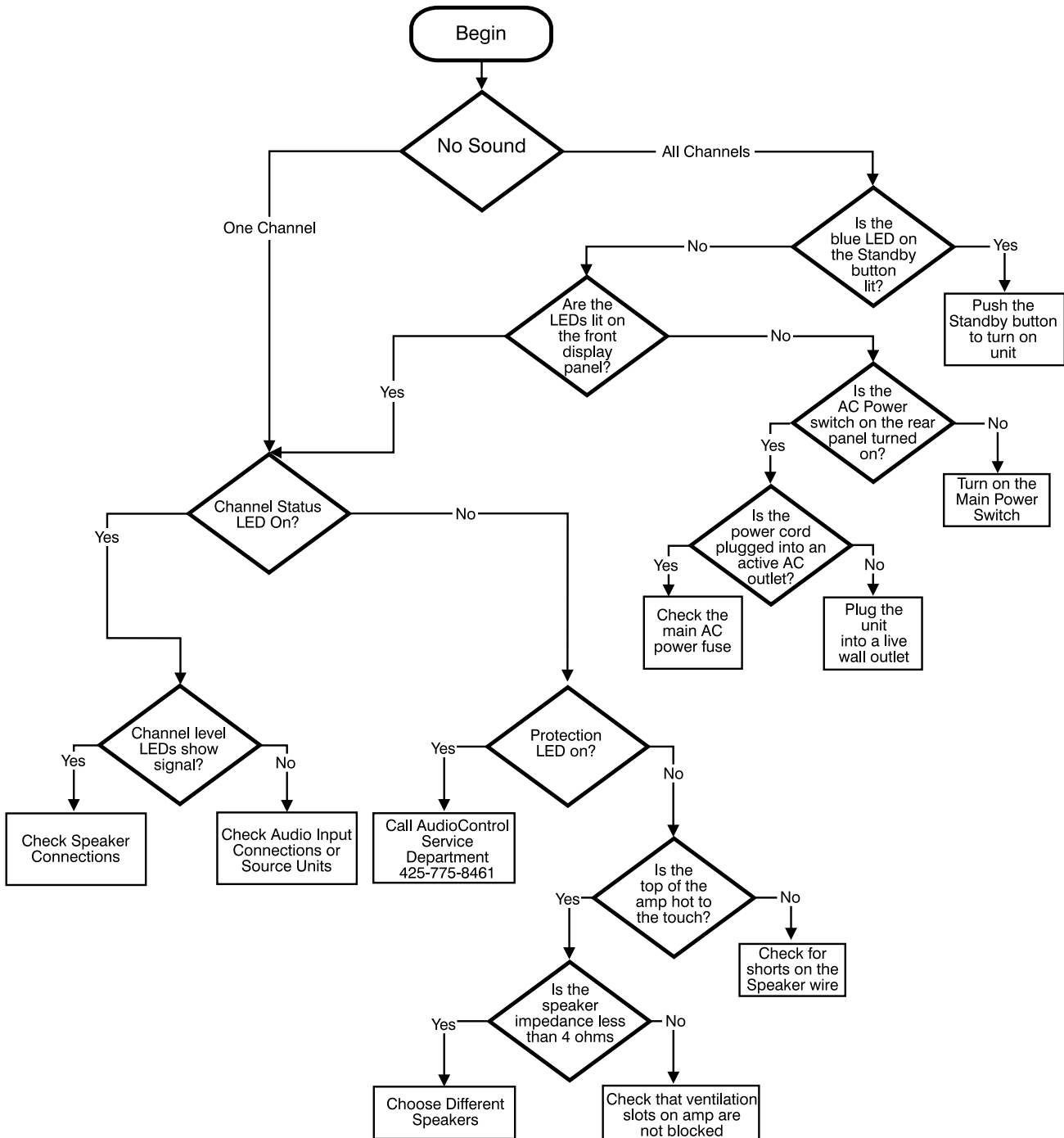


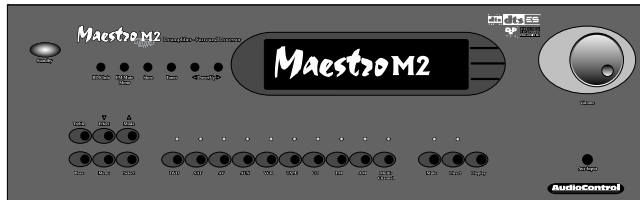
Figure 6

Troubleshooting The Savoy



Subtle Plug for other AudioControl Products

The Savoy is a fantastic amplifier. But even fantastic amplifiers in a poor system are disappointing, which is why AudioControl's Perfection Home Theater family of products includes amplifiers, pre-amps, and processors. The Maestro M2 pre-amp processor is a fantastic match for the Savoy amplifier, both cosmetically and acoustically. The Maestro M2 has balanced outputs, 2nd zone control, HDMI video switching, and 7.1 surround processing.



Adding the Diva Digital Audio Enhancement System allows you to calibrate the system to perfection. The Diva is the most powerful room correction processor on the planet. It has independent equalizable spectra for all 8 channels, digital delay/speaker alignment, and 20 memory presets allowing you to select the way the system will sound for the particular program you're watching.

When you need to run a line level audio signal more than 20 feet, you open up the possibility of introducing noise and signal distortion to the system.



However, you can protect yourself from these problems by running a balanced signal between components. If your components do not have balanced XLR outputs or inputs, you can still run a balanced signal using AudioControl's Balanced Line products. The BLD-10 and BLR-10 have been designed to convert an unbalanced RCA signal to a balanced signal that is sent over inexpensive Category 5 wire, then convert it back to an unbalanced signal at the receiving end. This simple system provides a clean and accurate means of sending audio

signals great distances (up to 1000') without concern for picking up noise and interference along the way. AudioControl can do the same with composite and S-video signals (BVD-10 and BVR-10) as well as component video (BVD-20 and BVR-20).



The Warranty

People are scared of warranties. Lots of fine print and months of waiting around. Well, fear no more. This warranty is designed to make you rave about AudioControl to your friends. It's a warranty that looks out for you and helps you resist the temptation to have your friend, who's "good with electronics," try to repair your Savoy amplifier. So go ahead, read this warranty, then take a few days to enjoy the new Savoy amplifier before sending in the warranty card and comments.



The AudioControl "Bulletproof" warranty is designed to protect the owner of the Savoy amplifier from creating more problems if something should happen to the product. AudioControl stands behind the quality of their products and prefers to take responsibility for service.

"Conditional" is not an ominous term. The Federal Trade Commission tells all manufacturers to use the term to indicate that certain conditions have to be met before they'll honor the warranty. If you meet all of these conditions, AudioControl will warrant all materials and workmanship on the Savoy for five (5) years from the date you bought it, and we will fix or replace it, at our option, during that time.

The Conditions

1. You fill out the warranty card and send it to us within 15 days of installation.
2. You must keep your sales receipt for proof of purchase showing when and from whom the unit was bought. In today's world, this is a good idea to put into practice with any product you purchase.
3. The Savoy amplifier must have originally been purchased from an authorized AudioControl dealer. You do not have to be the original owner, but you do need a copy of the original sales slip.
4. Do not let anybody service the Savoy amplifier who is not (a) the AudioControl factory, or (b) somebody authorized in writing by AudioControl to service the Savoy amplifier. If anyone other than a or b messes with the Savoy amplifier, the warranty will be void.
5. The warranty will also be void if the serial number is altered or removed, or if the Savoy amplifier has been used improperly. Improper use is defined as (a) physical damage (don't use the Savoy amplifier as a step-stool to reach the top of the book shelf), (b) improper connections (120 volts into the RCA jacks will fry the poor thing), and (c) sadistic things (as heavy as it is, the Savoy is not designed to double as the anchor on your next fishing excursion).

Assuming you conform to 1 through 5, AudioControl will take care of you by either fixing the original or replacing it with a new one at our option.

Legalese Section

This is the only warranty given by AudioControl. This warranty gives you specific legal rights that vary from state to state. Promises of how well the Savoy amplifier will perform are not implied by this warranty. Other than what AudioControl has covered in this warranty, AudioControl has no obligation, express or implied. Also, AudioControl will not be obligated for direct or indirect consequential damage to your system caused by hooking up the Savoy amplifier.

Failure to return a properly completed warranty card negates any service claims.

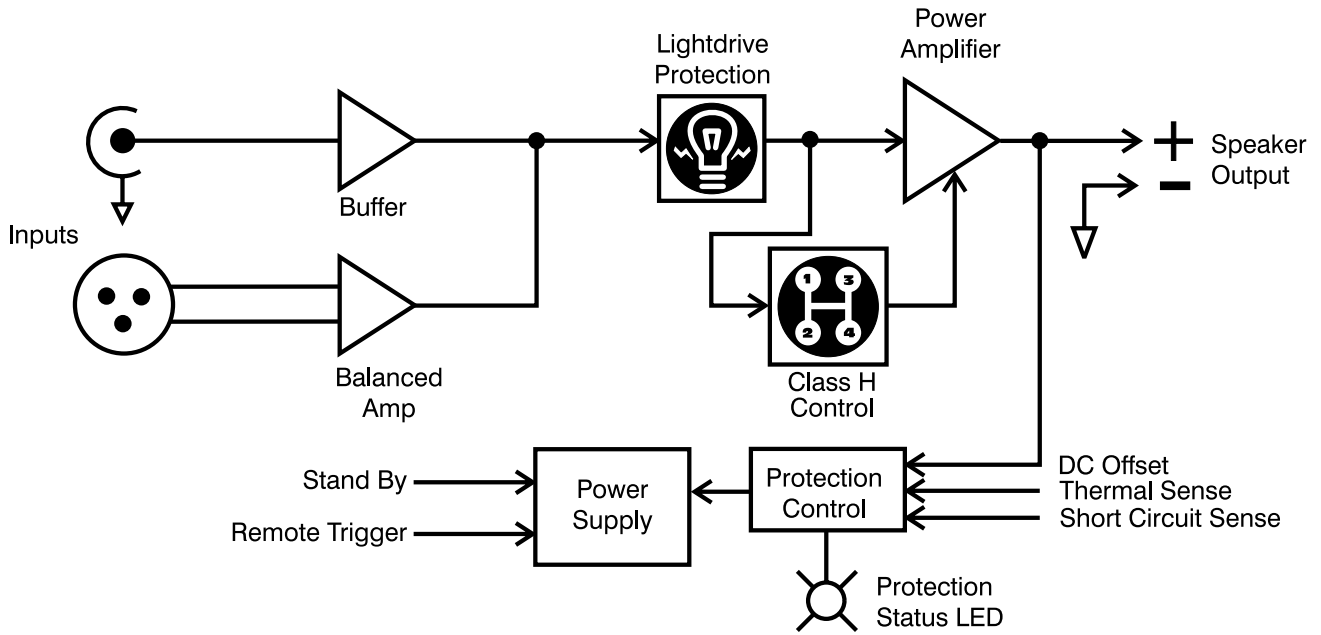
What To Do If You Need Service

First, contact AudioControl, either by phone (425) 775-8461, fax (425) 778-3166, or email (service@audiocontrol.com). AudioControl will ask you a few questions to be sure that the problem is not something you can resolve without giving up your equipment for them to look at. If it is determined that the unit needs to be returned for evaluation, please include the following with the returning unit:

1. A copy of your receipt (NOT the original) to serve as your proof of purchase.
2. A brief explanation of the trouble you are having with the Savoy, including circumstances within which the problem is evident.
3. A return street address (No PO Boxes).
4. A daytime phone number in case an AudioControl technician has a question about the problem you are having.

You're responsible for the freight charges incurred by sending the unit to AudioControl, but AudioControl will pay the return freight. AudioControl will match whatever shipping method you choose to send in the unit. If you send it overnight, AudioControl will return it overnight. If you send it on the back of a gypsy's camel, well...AudioControl will probably choose a different method to return the unit to you. (AudioControl company policy explicitly limits equipment transport via animal to horses and elephants.)

Block Diagram



Savoy Specifications

As technology advances, AudioControl reserves the right to continuously change our specifications.

Number of Channels:	7
Output Power 20Hz – 20kHz:	150 Watts Per Channel, All Channels Driven into 8 ohms
Minimum Speaker Load:	4
Damping Factor:	Greater than 400
Frequency Response (2Hz - 50kHz):	+/- 0.2dB
S/N Ratio:	Greater than 105dB, A-wtd, ref. Full Output
Total Harmonic Distortion:	0.05% (150 Watts @ 8 ohms 20-20k)
Input Sensitivity (Voltage Gain):	A – 31.5dB gain, B – 29dB gain, C – 26dB gain
Input Impedance:	22 k
Protection:	Clipping, Thermal, Short Circuit, DC offset
Peak AC Power Draw:	1490 Watts
Average AC Power Draw:	690 Watts
Weight:	41 lbs.
Dimensions:	Width - 17" Height - 5.75" Depth - Chassis – 15.75" Depth - Chassis and Binding Posts – 17.5"
Country of Origin:	U.S.A.

This manual was written, designed, printed, folded, bound, and stuffed into the box in the U.S.A. Probably on a really soggy day considering the location.

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