Additional Information
Your Renkus-Heinz SG series loudspeaker was carefully tested and fully inspected before leaving our factory and should have arrived in perfect condition. Please carefully inspect your loudspeaker and its shipping carton for any noticeable damage and if any damage is found, immediately notify the shipping company.

Only the consignee may institute a claim with the carrier for any damage incurred during shipping. Be sure to save the carton and all packing materials for the carrier's inspection.

It is also a good idea to save the carton and packing material even though the loudspeaker arrived in good condition. If shipping the loudspeaker should ever be required, it should be shipped only in its original factory packing.

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 humans.

The exclamation point, within an equilateral triangle is intended to alert the users to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION

RISK OF ELECTRIC SHOCK: OPEN ONLY IF QUALIFIED AS SERVICE PERSONNEL

To reiterate the above warnings: servicing instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than that contained in the OperationInstructions unless you are qualified to do so . Refer all servicing to qualified personnel.

Erklärung der graphischen Symbole

Der Blitz mit nach untenzielendem Pfeil in einem gleichseitigen Dreieck weist den Benutzer auf das Vorhandensein einer unisolierten, "gefährlichen Spannung" im Gehäuse hin, die stark genug sein kann, einer Person einen gefährlichen elektrischen Schlag zu versetzen.

Das Ausrufezeichen in einem gleichseitigen Dreieck weist den Benutzer auf wichtige Betriebs- und Wartungsvorschriften in den beiliegenden Unterlagen des Gerätes hin.

VORSICHT

GEFAHR EINES ELETRISCHEN SCHLAGES: NURVON QUALIFIZIEREM WARTUNGSPERSONAL ZU ÖFFNEN

Eindrigliche Warnung: Wartungsvorschriften dienen nur der Benutzung durch qualifizieres Personal. Zur Vermeidung eines elektrischen Schlages keine anderen als die in den Betriebsvorschriften beschriebenen Wartungsarbeiten ausführen, es sei denn Sie sind dafür qualifiziert. Wartungsarbeiten sind nur von qualifiziertem Wartungspersonal auszuführen.

Important:
Your Renkus-Heinz amplifier contains no user-serviceable parts and all service should be referred to qualified service personnel. We recommend that it be returned to the factory in its original packing carton if factory service is required.

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RH 640 August 2008

SYGMA

SG SERIES

Self-Powered Loudspeakers

SG61, SG81. SG121,
SG151, SG12S

PF1-200, PF1-200R, PF1-500, PF1-500R, PF2-500R
Power Amplifier Modules

OWNERS MANUAL

RENKUS-HEINZ

INTRODUCTION

Congratulations on your purchase of a Renkus-Heinz SG Series loudspeaker system. Your SG Series loudspeaker has been designed to provide you years of trouble-free high performance listening pleasure. We hope you enjoy it.

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 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 plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Make sure the power cord remains readily accessible at all times.
12. Only use attachments/accessories specified by the manufacturer.
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"**

"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".

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 humans.

The exclamation point, within an equilateral triangle is intended to alert the users to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT MOUNTING INSTRUCTIONS

To ensure proper air movement for the cooling of the amplifier module, we recommend a minimum of 2 to 3 feet of clearance in front of the loudspeaker and at least 3 to 4 inches of clearance from the other cabinet surfaces.

Your SG Series loudspeaker was designed to be mounted in an upright position. Please do not place it on its side on the floor.

Safety certifications do not include methods for mounting loudspeakers.

Installing a PF1 series power amplifier into a SGX Series loudspeaker

Adding a power amplifier to a CFX loudspeaker is a quick and easy process. Before you begin, make sure you have a clean workspace, preferably one with a soft, non-scratching surface and a #2 Phillips Screwdriver.

A step-by-step procedure follows:

1. Using the Phillips screwdriver, remove the eight screws holding the connector plate to the rear of the cabinet. Save the screws, you'll need them to install the amplifier.

2. Gently remove the input connector plate from the cabinet. You can use a SpeakOn connector as a handle, if you want

3. Remove the white quick disconnect connector from the PC board on the inside of the input connector plate by squeezing the sides of the connector and pulling up. Set the input connector plate aside and save it in case you ever need to switch the loudspeaker back to its externally powered configuration.

4. Prepare PF1-200 amplifiers for installation by setting the switches on the side of the amplifier according to the table below. Improper settings on these switches can lead to loudspeaker damage which is not covered by our warranty.

	HIGH PASS FILTER	LOW PASS FILTER
SG61	**90**	**20K**
SG81	**60**	**20K**
SG121	**30**	**20K**
SG151	**30**	**20K**
SG12S	**30**	**100**

Prepare PF1-500 amplifiers for installation by setting the single switch to either "Flat" or "100 Hz Filter". Use "Flat" for full range operation,100 Hz Filter when the amplifier is being installed in a SGX12S subwoofer. PF1-200R and PF1-500R RHAON empowered amplifiers do not have these switches as these settings are controlled remotely.

5. Plug the white quick disconnect connector into the matching socket on the rear of the power amplifier. The socket is keyed, so you will have to properly align the connector with the socket. Make sure that both sides of the connector latch into place.

6. Insert the power amplifier into the opening in the back of the loudspeaker and reinstall the eight screws to secure the amplifier into the cabinet. You can use an XLR connector as a handle.

Step 1

Step 2

Step 3

Step 4

Step 5

Step 6

PF1-500R & PF2-500R Amplifier Modules

The PF1-500R and PF2-500R RHAON empowered amplifier modules are similar except for the PF2-500R having dual (high & low frequency) amplifiers. Both include comprehensive signal processing and protective circuitry along with RHAON, which adds digital audio distribution and remotely located control and supervision to the loudspeaker.

XLR Type Connectors
The female INPUT connector connects to the amplifier's Primary Analog Input. Pin 2 is "hot" and pin 3 is "neutral". Pin 1 is chassis ground. When connected to a balanced source, the shield may either be lifted or connected at the source end. The choice should be made on the basis of minimum hum.

With an unbalanced source, connect the signal to pin 2 and source ground to pin 3. Improper operation results when only pin 2 or only pin 3 and pin 1 (ground) are used for an unbalanced input.

The male LOOPING connector is used to "loop through" to additional loudspeakers. It has "straight through" connections from the Input connector.

RJ-45 Ethernet Connectors
The PRIMARY RJ-45 connector is used to connect the amplifier to the Ethernet network for Cobranet digital audio distribution and remote control and suopervision. The SECONDARY RJ-45 provides a "redundant" input for backup purposes.

PF2-500R amplifier module shown.

Phoenix Connectors
The two Phoenix connector provide;
1. Input and Looping connections for a secondary analog input.
2. Input facilities for an AEA3id (AES/EBU) format digital audio input.
3. Fault Relay and Fault Detect connections.

Status LEDs
The green "POWER" LED indicates the status of the amplifier's power. It turns bright green when the amplifier is turned "on".

The green "SIGNAL" LED indicates the presence of an audio signal. It flashes when a signal is present.

The red "OVERDRIVE" LED flashes red when the amplifier is being overdriven

The red "THERMAL" LED glows when the amplifier's over-temperature sensor has shut the amplifier down.

Volume "Up" and "Down" Push Buttons
Adjust the loudspeaker's output level up and down.

PAD Switch and LED
When "on" inserts a 10 dB pad into the Primary analog input to allow input signals of up to 20 dBu. Red LED glows when pad is inserted.

Mute Switch(s) and LED(s)
When 'on" mute the loudspeaker's output. Red LED(s) glows when mute is "on". PF1-500R has a single Mute switch, the PF2-500R has two (one for each channel).

Power On/Off Switch
This switch is used to turn the amplifier "On" or turn it "Off". In the "Off" position, the amplifier is disconnected from the AC Mains.

Voltage Selector Switch
This switch selects between 110/120 V and 220/240 V 50/60 Hz operation.

AC Mains Fuse
Protective power line fuse; replace only with correct size and type.If the fuse blows a second time, the am-

WARNING

1. The AC Mains must be connected to a mains socket outlet with a protective earthing connection.

2. The PF1-500R operates from either 110/120 V, 50/60 Hz or 220/240V 50/60 Hz. Check the Voltage Selector setting before connecting power to the amplifier.

3. To remove power from the SG Series loudspeaker, disconnect the AC power cord.

PF1-200 Amplifier Module

Your PF1-200 power amplifier was developed by Renkus-Heinz engineers to match the loudspeaker's high performance transducers and includes comprehensive signal processing and protective circuitry.

Input Connector
The female 3-pin XLR type INPUT connector connects to the amplifiers 10 K Ohms, electronically balanced input. It requires a 1.0 V signal for full rated output.

Pin 2 is "hot" and pin 3 is "neutral". Pin 1 is chassis ground. When the amplifier is connected to a balanced source, the shield may either be lifted or connected at the source end. The choice should be made on the basis of minimum hum.

With an unbalanced source, connect the signal to pin 2 and source ground to pin 3 (connecting the signal to pin 3 is not recommended. Note: Improper operation results when only pin 2 or only pin 3 and pin 1 (ground) are used for an unbalanced input.

Looping Connector
The male 3-pin XLR type "looping" connector is used to "loop through" to additional SG Series loudspeakers. It has "straight through" connections from the Input connector

Status LEDs.
The green "POWER" LED indicates the status of the amplifier's power. It turns bright green when the amplifier is turned "on".

The green "SIGNAL" LED indicates the presence of an audio signal. It flashes when a signal is present.

The yellow "LIM" LED indicates the amplifier's protective limiter is being activated by a high signal level. A limited amount of flashing during operation is normal; a continuos glow indicates the amplifier is being overdriven and the signal level should be reduced.

Attenuation Control
This control adjusts the loudspeaker's output level. When it is turned fully clockwise, the amplifier will have its maximum voltage gain and will deliver its rated output when driven by its rated signal.

As a general rule, setting the control in the full clockwise position provides maximum headroom; setting the control at a lower level maximizes the signal/noise level.

Power On/Off Switch
This switch is used to turn the amplifier "On" or turn it "Off". In the "Off" position, the amplifier is disconnected from the AC Mains.

"Push To Reset" Circuit Breaker
The "Push To Reset" Circuit Breaker acts as a protective power line fuse and automatically turns the power to the amplifier "Off" in case of overload. If the switch shuts "Off" during normal use, push it back to the "On" position just one time. Do not attempt to operate the amplifier by holding the switch in the "on" position. If it will not stay on by itself, the amplifier needs service.

AC Mains Voltage
The PF1-200 features a universal power supply that operates from 100 - 240 Volts, 50/60 Hz.

WARNING

1. The AC Mains must be connected to a mains socket outlet with a protective earthing connection.

2. To remove power from the SG Series loudspeaker, disconnect the AC power cord.

PF1-200R Amplifier Module

The PF1-200R RHAON empowered power amplifier. was developed by Renkus-Heinz engineers to match the loudspeaker's high performance transducers. It includes comprehensive signal processing and protective circuitry along with RHAON, which adds digital audio distribution and remotely located control and supervision to the loudspeaker.

XLR Type Connectors
The female INPUT connector connects to the amplifier's Primary Analog Input. Pin 2 is "hot" and pin 3 is "neutral". Pin 1 is chassis ground. When connected to a balanced source, the shield may either be lifted or connected at the source end. The choice should be made on the basis of minimum hum.

With an unbalanced source, connect the signal to pin 2 and source ground to pin 3. Improper operation results when only pin 2 or only pin 3 and pin 1 (ground) are used for an unbalanced input.

The male LOOPING connector is used to "loop through" to additional loudspeakers. It has "straight through" connections from the Input connector.

RJ-45 Ethernet Connectors
The PRIMARY RJ-45 connector is used to connect the amplifier to the Ethernet network for Cobranet digital audio distribution and remote control and suopervision. The SECONDARY RJ-45 provides a "redundant" input for backup purposes.

Phoenix Connectors
The two Phoenix connector provide;
1. Input and Looping connections for a secondary analog input.
2. Input facilities for an AEA3id (AES/EBU) format digital audio input.
3. Fault Relay and Fault Detect connections.

Status LEDs
The green "POWER" LED indicates the status of the amplifier's power. It turns bright green when the amplifier is turned "on".

The green "SIGNAL" LED indicates the presence of an audio signal. It flashes when a signal is present.

The red "OVERDRIVE" LED flashes red when the amplifier is being overdriven

The red "THERMAL" LED glows when the amplifier's over-temperature sensor has shut the amplifier down.

Volume "Up" and "Down" Push Buttons
Adjust the loudspeaker's output level up and down.

PAD Switch and LED
When "on" inserts a 10 dB pad into the Primary analog input to allow input signals of up to 20 dBu. Red LED glows when pad is inserted.

Mute Switch and LED
When 'on" mutes the loudspeaker's output . Red LED glows when mute is "on"

Power On/Off Switch
This switch is used to turn the amplifier "On" or turn it "Off". In the "Off" position, the amplifier is disconnected from the AC Mains.

"Push To Reset" Circuit Breaker
The "Push To Reset" Circuit Breaker acts as a protective power line fuse and automatically turns the power to the amplifier "Off" in case of overload.

If the switch shuts "Off" during normal use, push it back to the "On" position just one time. Do not attempt to operate the amplifier by holding the switch in the "on" position. If it will not stay on by itself, the amplifier needs service.

WARNING
1. The AC Mains must be connected to a mains socket outlet with a protective earthing connection.
2. To remove power from the SG Series loudspeaker, disconnect the AC power cord.

PF1-500 Amplifier Module

The PF1-500 power amplifier was developed by Renkus-Heinz engineers to match the loudspeaker's high performance transducers and includes comprehensive signal processing and protective circuitry.

Input Connector
The female 3-pin XLR type INPUT connector connects to the amplifiers 10 K Ohms, electronically balanced input. It requires a 1.0 V signal for full rated output.

Pin 2 is "hot" and pin 3 is "neutral". Pin 1 is chassis ground. When the amplifier is connected to a balanced source, the shield may either be lifted or connected at the source end. The choice should be made on the basis of minimum hum.

With an unbalanced source, connect the signal to pin 2 and source ground to pin 3 (connecting the signal to pin 3 is not recommended. Note: Improper operation results when only pin 2 or only pin 3 and pin 1 (ground) are used for an unbalanced input.

Looping Connector
The male 3-pin XLR type "looping" connector is used to "loop through" to additional SG Series loudspeakers. It has "straight through" connections from the Input connector.

Status LEDs.
The green "POWER" LED indicates the status of the amplifier's power. It turns bright green when the amplifier is turned "on".

The green "SIGNAL" LED indicates the presence of an audio signal. It flashes when a signal is present.

The yellow "LIM" LED indicates the amplifier's protective limiter is being activated by a high signal level. A limited amount of flashing during operation is normal; a continuos glow indicates the amplifier is being overdriven and the signal level should be reduced.

Attenuation Control
This control adjusts the loudspeaker's output level. When it is turned fully clockwise, the amplifier will have its maximum voltage gain and will deliver its rated output when driven by its rated signal.

As a general rule, setting the control in the full clockwise position provides maximum headroom; setting the control at a lower level maximizes the signal/noise level.

Power On/Off Switch
This switch is used to turn the amplifier "On" or turn it "Off". In the "Off" position, the amplifier is disconnected from the AC Mains.

Voltage Selector Switch
This switch selects between 110/120 V and 220/240 V 50/60 Hz operation.

AC Mains Fuse
Protective power line fuse; replace only with correct size and type. If the fuse blows a second time, the amplifier needs service.

WARNING
1. The AC Mains must be connected to a mains socket outlet with a protective earthing connection.
2. The PF1-500 operates from either 110/120 V, 50/60 Hz or 220/240V 50/60 Hz. Check the Voltage Selector setting before connecting power to the amplifier.
3. To remove power from the SG Series loudspeaker, disconnect the AC power cord.