

TREO Engineering Limited Warranty USA

TREO Engineering Amplifiers are guaranteed to be free from defects in workmanship and materials for ninety days. If they are installed by an authorized Treo Engineering dealer this warranty is extended to three years. This warranty is conditional on the completion and return, within fourteen days of purchase, of warranty card enclosed with each amplifier. This warranty is valid only to the original purchaser. Proof of purchase must be available and serial number must be intact for warranty to be honored.

Abuse (including, but not limited to under or over voltage), misuse, accident, neglect, modification of amplifier, shipment of amplifier in carton/container other than the original packaging, missing serial number, use of the amplifier for any purpose other than its original intent, and damage from nature, its elements, or Act of God void this warranty. TREO Engineering shall not be held responsible for damage caused by this amplifier to its listeners, environment, related components, or any other damage directly or indirectly related to this amplifier.

Except those set out in this statement of limited warranty, all warranties expressed or implied for this amplifier, including all expressed or implied warranties of merchantability and fitness for a particular purpose, are specifically disclaimed by TREO Engineering. Some states do not allow exclusions or limitations or implied warranties so these may not apply. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

TREO Engineering shall replace or repair this amplifier and pay for its return ground freight. The owner of this amplifier is responsible for providing the proper packing and freight for this amplifier to be returned to TREO Engineering or its authorized service center. Please contact TREO Engineering at 1-800-530-5925 or rma@treoonline.com to obtain an RA# for the product's return.



TREO

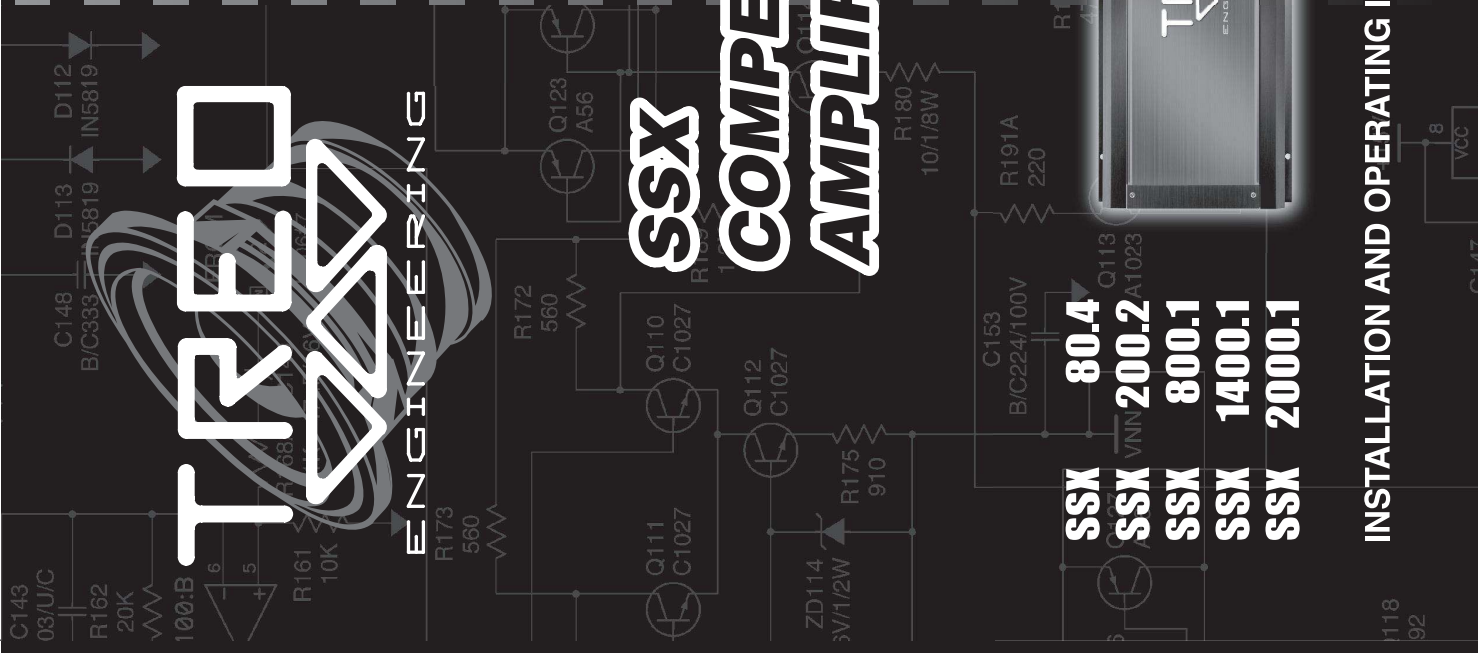
ENGINEERING

SSX COMPETITION AMPLIFIER

SSX 80.4
SSX 200.2
SSX 800.1
SSX 1400.1
SSX 2000.1



INSTALLATION AND OPERATING INSTRUCTIONS



Before You Begin Installation

Before you begin, you will need tools, supplies and adapters. It is best to make sure you have everything you need before you start. There is a list of supplies and tools on the next page.

Amplifier Location

Important:

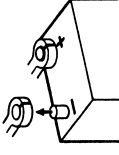
Allow air circulation around the amplifier.

The amplifier's compact design allows greater flexibility in mounting. It can be mounted under the seat and trunk.

When selecting a location, remember that amplifiers generate heat. Select a location where air can circulate around the amplifier. Do not cover the AMPLIFIER with carpets or enclose it behind interior trim panels. Every installation will be a bit different based upon vehicle design. Check all locations and placements carefully before making any cuts or connections.

Disconnect Battery

Before you begin, always disconnect the battery negative terminal.



Important

If wiring connections are made incorrectly the unit will not operate properly and could be damaged. Follow the installation instructions carefully or have the amplifier installed by an authorized TREO dealer.



SAFETY INSTRUCTIONS:

Take care when working near the gas tank or near electrical wiring. Protect wires and connections against damage and short circuits. The +12V wire must be fused within 12" of the battery terminal. Turn your stereo off when working with your amplifier. If you have to replace the fuse of your amplifier always use a fuse with the same rating. Do not cover your amplifier during operation. Covering the amplifier may cause it to overheat.



CAUTION!

Turning the volume too high may cause permanent damage your hearing or to speakers connected to your amplifier.

Supplies and Tools Needed

Supplies:

- Speaker wire
- Nuts and bolts to secure amplifier
- Electrical tape
- Solder (optional)
- 1/2" thick medium density fiberboard (MDF) to mount amplifier (optional)

Amplifier installation kit:

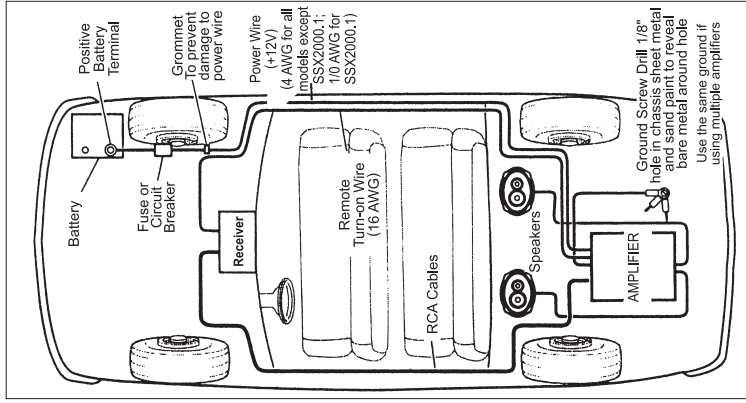
You will need the following supplies. Many of these items may be packaged together in an amplifier installation kit:

- 25 feet of power wire (4 AWG for all models except SSX2000.1; 1/0 AWG SSX2000.1)
- Fuse or circuit breaker (40A for SSX80.4, 70A for SSX200.2, 90A for SSX800.1, 120A for SSX1400.1, 160A for SSX2000.1)
- 20 feet of 16 AWG wire for remote turn-on connection (dark blue if possible)
- 20 foot RCA cable
- Battery connector (top post or side post)
- Three 4 AWG ring terminals
- Two 4 AWG butt connectors
- Two 14 AWG butt connectors
- One grommet to protect power wire
- 12 AWG spade terminals for speaker connections (SSX80.4 & SSX200.2 only)
- Two 4 AWG spade terminals (SSX80.4 & SSX200.2 only)
- One 16 AWG spade terminal (SSX80.4 & SSX200.2 only)

Tools:

- Flat and Phillips screwdrivers
- Wire cutter
- Wire stripper
- Drill and 1/8" drill bit
- Crimping tool
- Circuit tester
- A pocket knife or scraper to make a clean connection for the ground wire
- Tools to access speaker wires on the receiver (screwdriver, socket wrench set or other tools)
- Soldering iron (optional)

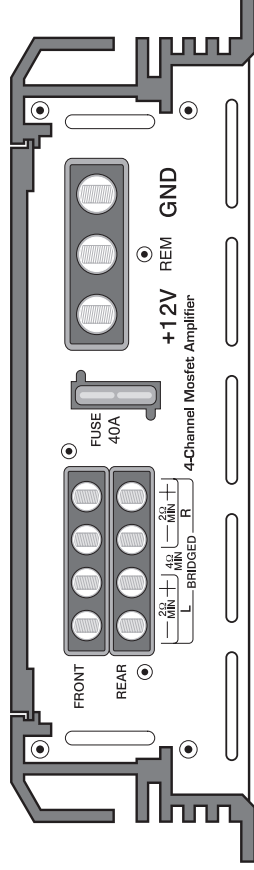
Routing Wires



TREO TIP

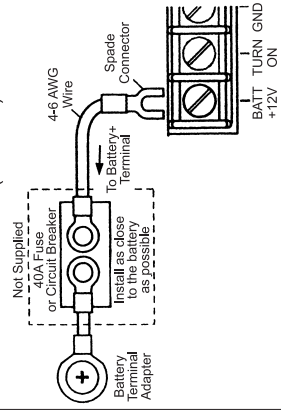
Bigger is better

Stereo installation dealers sell extra thick power and speaker wires to ensure best sound. Look for 1/0 AWG power wire, especially if you have several amplifiers.



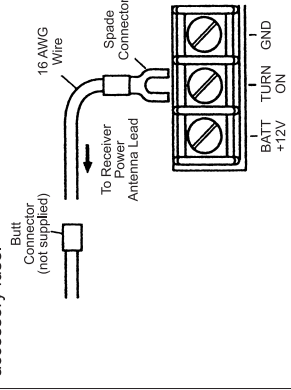
Power Terminal (BATT+12V)

Connect directly to the vehicle battery + terminal with 4 AWG wire (minimum)



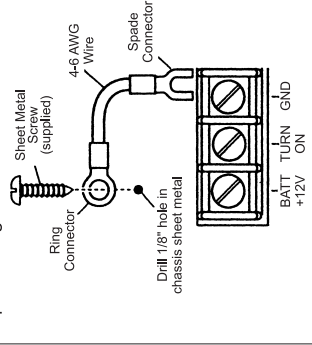
Remote/Turn On Terminal

Connect the radio power antenna lead from the receiver to the amplifier Remote terminal. This turns the amplifier on whenever the receiver is turned on. If a power antenna lead is not available, connect this wire to the radio or accessory fuse.

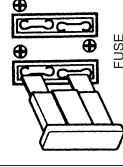


Ground Terminal (GND)

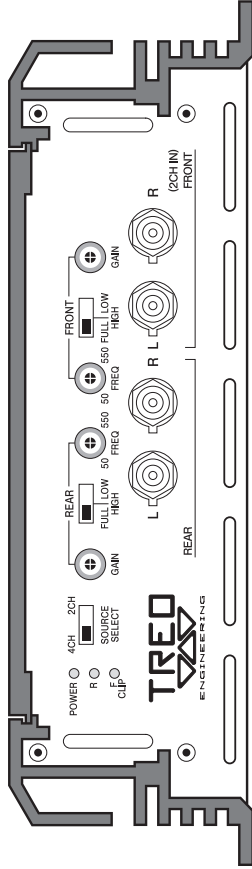
Connect to a good chassis ground. The ground connection should be to clean, unpainted metal to provide a good electrical connection.



Fuses



Please follow original fuse rating



Low Level Input

Use a pair of high quality shielded twisted-pair stereo audio cables with RCA type jacks. Most trunk-mount amplifier installations require 20-foot RCA cable. Most under-seat and pickup truck installations use 12-foot cables. Connect RCA cables from your receiver to the RCA input jacks on the amplifier.

Gain



Adjust GAIN so the receiver volume control operates normally. Use GAIN to balance volume for all speakers.

Power LED



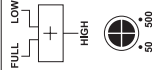
This green LED lights when the unit is operational.

Input Clip LED



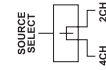
If they flash more than occasionally, there is too much gain on the amplifier, and the signal is being distorted.

Crossover (XOVER)

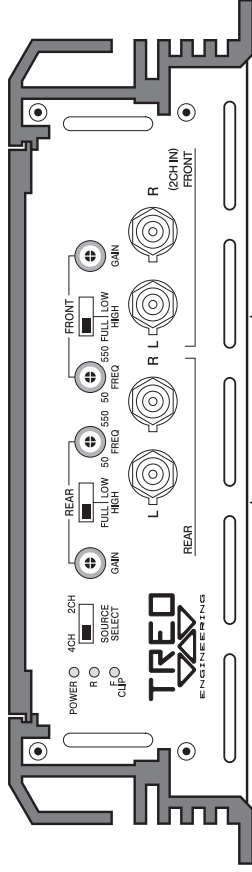


Control and switch selects mode and frequency.

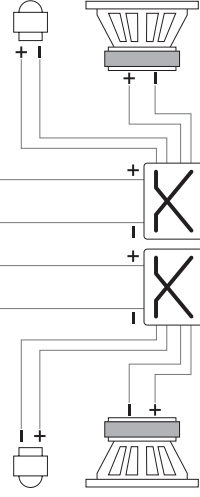
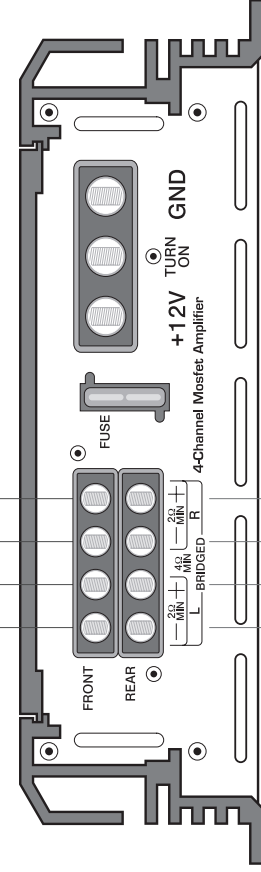
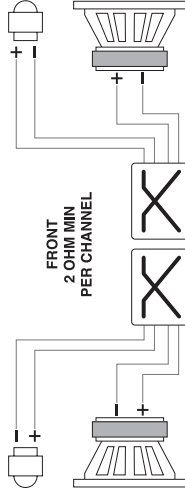
Input Mode



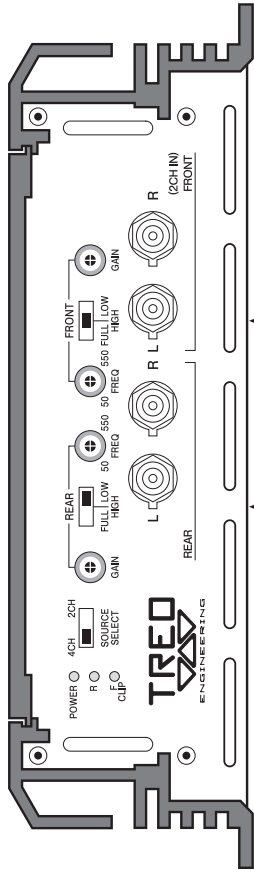
2CH R/L RCA signal to FRONT input, REAR internal connection to Front.
4CH RCA signal connect to Front R/L and Rear R/L directly.



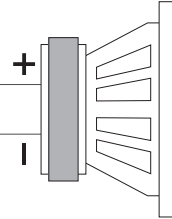
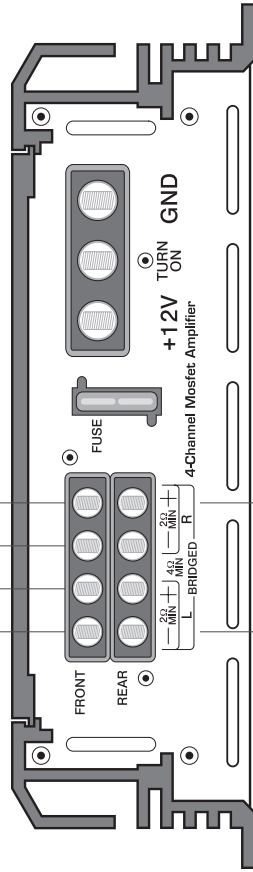
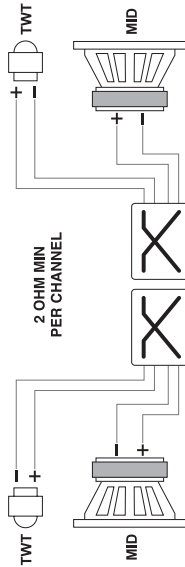
SET TO FULL



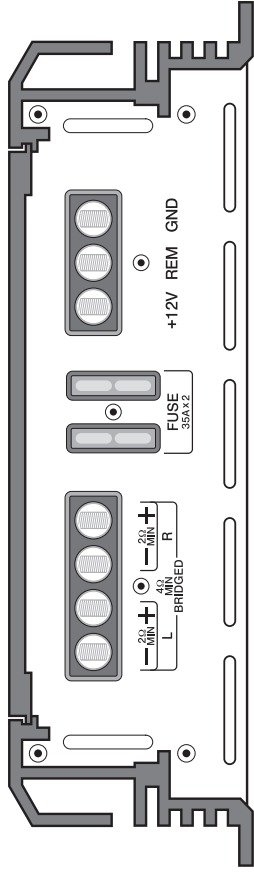
4 Channel Operation



SET TO LOW SET TO HIGH

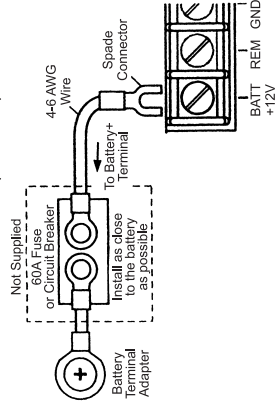


Mixed Bridged Operation



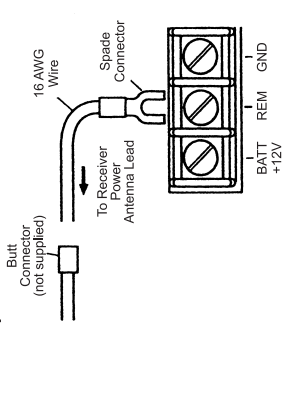
Power Terminal (BATT+12V)

Connect directly to the vehicle battery + terminal with 4 AWG wire (minimum)



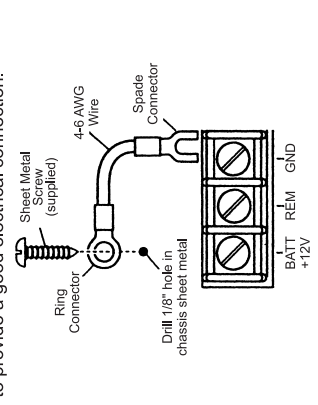
Remote/Turn On Terminal

Connect the radio power antenna lead from the receiver to the amplifier Remote terminal. This turns the amplifier on whenever the receiver is turned on. If a power antenna lead is not available, connect this wire to the radio or accessory fuse.

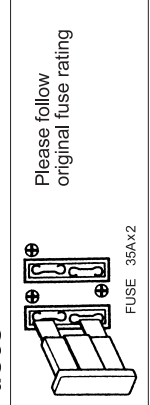


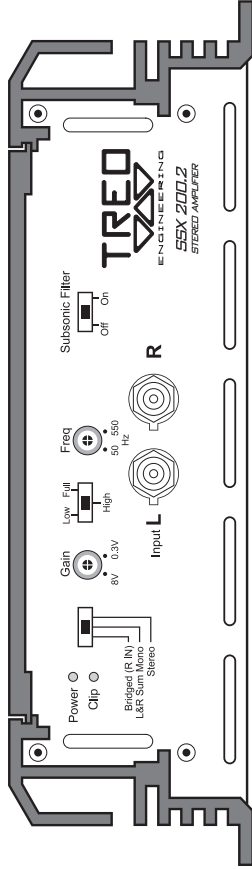
Ground Terminal (GND)

Connect to a good chassis ground. The ground connection should be to clean, unpainted metal to provide a good electrical connection.



Fuses





Low Level Input

Use a pair of high quality shielded twisted-pair stereo audio cables with RCA type jacks. Most trunk-mount amplifier installations require 20-foot RCA cable. Most under-seat and pickup truck installations use 12-foot cables. Connect RCA cables from your receiver to the RCA input jacks on the amplifier.

Gain



Adjust GAIN so the receiver volume control operates normally. Use GAIN to balance volume for all speakers.

Power LED



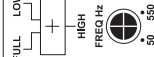
This green LED lights when the unit is operational.

Input Clip LED



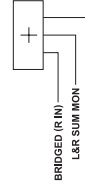
If they flash more than occasionally, there is too much gain on the amplifier, and the signal is being distorted.

Crossover (XOVER)



Control and switch selects mode and frequency.

Input Mode

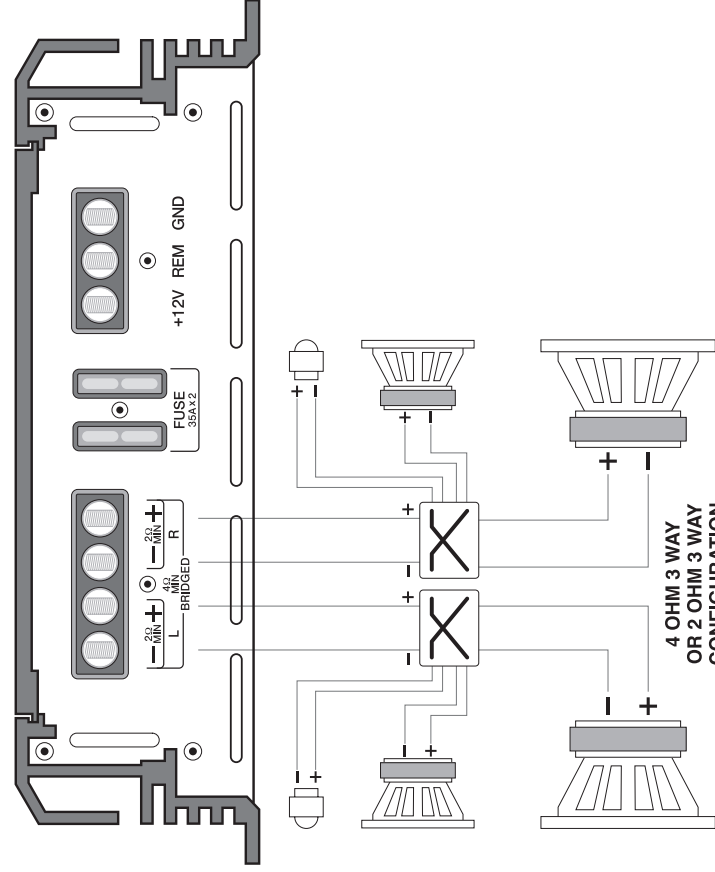
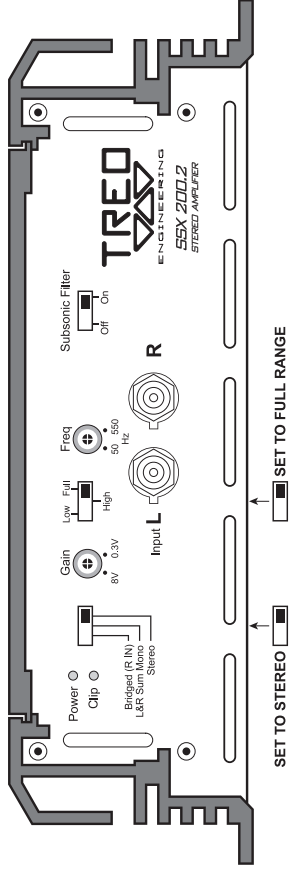


Stereo R/L Stereo
L&R SUM MONO
L Sum R for Mono.
BRIDGED (R IN)
R in only for bridged.

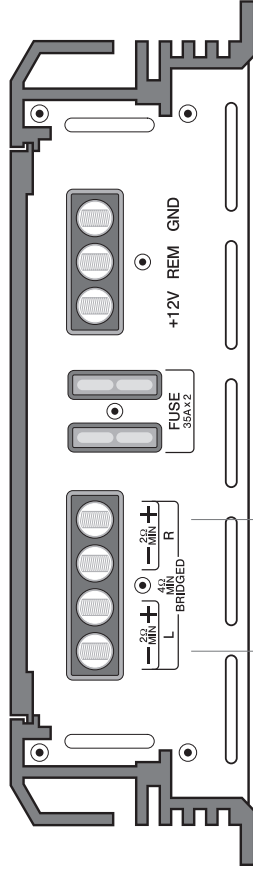
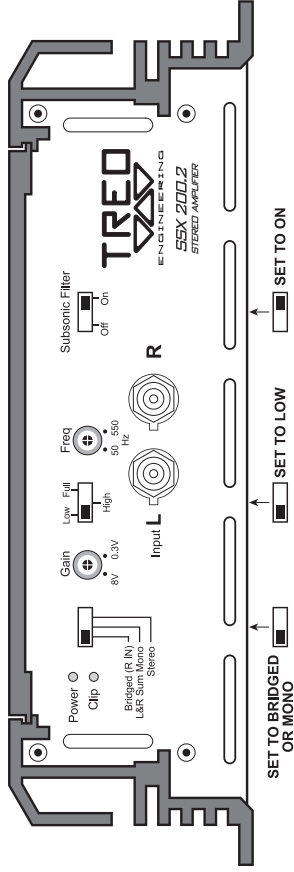
Subsonic



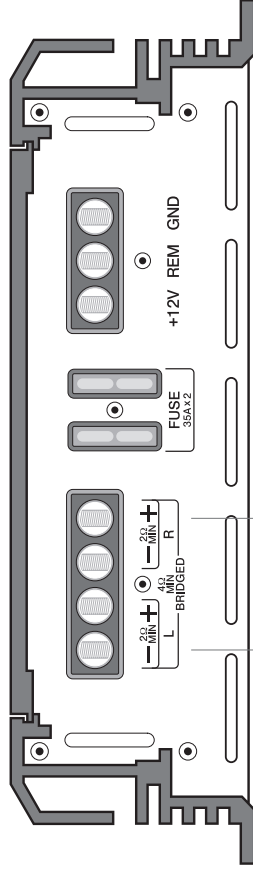
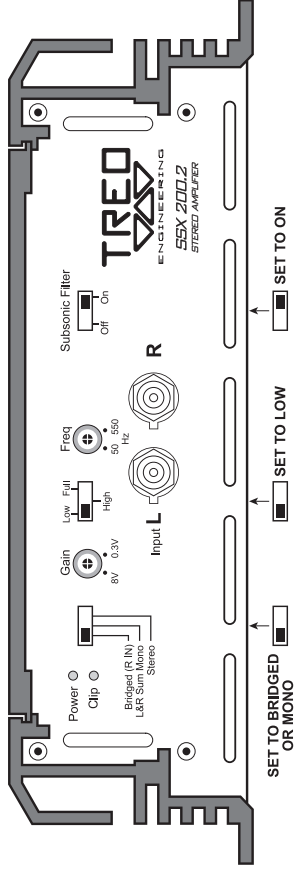
Subsonic filter 30Hz selector.
(-18dB/OCT.)



Stereo Operation 2



Bridged Mono Operation



2 Subwoofer SYSTEM Wiring

Specifications

	SSX 80.4	SSX 200.2
Total Power (14.4V @ 1KHz)	4-CH	2-CH
Channels	4/3/2 channel	2/1 channel
RMS Power (4 ohm) 14.4V @ 1KHz T.H.D 0.1%	4 x 80 watt	2 x 200 watt
RMS Power (2 ohm) at T.H.D 0.1%	4 x 130 watt	2 x 350 watt
RMS Power bridged (4 ohm)	2 x 195 watt	1 x 670 watt
Frequency Response ± 1dB	10Hz ~ 30KHz	10Hz ~ 30kHz
Signal to Noise Ratio	> 94 dB	> 95 dB
Separation @ 1KHz	> 72 dB	> 73 dB
THD	< 0.05%	< 0.05%
Input Sensitivity	350mv-8V	350mv-8V
Input Impedance	33 kohm	33 kohm
Low Pass Filter	50-550Hz/12dB	50-550Hz/12dB
High Pass Filter	50-550Hz/12dB	50-550Hz/12dB
Subsonic Filter		30Hz/18dB
Idle Current	1A	1.2A
Fuse Rating	ATC 40A	ATC 35A x 2
Dimensions	15.8" L x 7" W x 2.36" H	18" L x 7" W x 2.36" H



Troubleshooting

PROBLEM	CAUSE
No POWER indicator light on. No response.	Check + 12V and GND connection Check remote signal + 12V Check amplifier main fuse
POWER indicator light is on. No response.	Check input gain control Check RCA cable Check speaker and wiring for shorts Check for damaged speakers
No sound on one channel	Swap left/right input to check source ...if sound swaps too, source or signal cable is bad Swap left/right speaker to check speakers ...if sound does not swap, speaker or speaker wiring is bad ...in any other case, have your amplifier checked
Amplifier goes in protection mode at higher volume	Check speaker impedance [min. 2 ohm (or 4 ohm bridged mode)] Check speaker wiring for shortening
Dynamo or ignition noise in your system	Check wiring, see installation, Step 3

Things To Remember When Installing Your (SSX 800.1 • SSX 1400.1 • SSX 2000.1)

The design philosophy of the amplifier and mode of regulation requires that proper installation and load impedance instructions be adhered to at all times.

Minimum impedance recommended is 1 ohm.

Fuse Protection is 90A for SSX 800.1 , 120A for SSX 1400.1 , 160A for SSX 2000.1

This fuse rating should be sufficient under normal working conditions. However, if the amplifier is overloaded (see minimum impedance above) fuses may blow. Therefore, please try to avoid operating the amplifier under these conditions.

- 1** Mount the amplifier so that air flow is not restricted.
- 2** Mount the amplifier to a solid surface away from vibration, as these amplifiers are very heavy and vibration can damage amplifiers.
- 3** Take extreme caution when mounting the amplifier, so as not to damage the chassis with a drill or screwdriver.
- 4** Run a 4 AWG(1/0 AWG for SSX2000.1) wire from the battery, using a fuse with 12" of the positive battery terminal. The fuse is to protect the car from fire that could be caused by a short circuit.
- 5** Run a 4 AWG(1/0 AWG for SSX200.1) ground wire (as short as possible) to the closest chassis ground point. Be sure to remove the paint around the chassis ground point to provide a more solid electrical connection.
- 6** Run a 16 AWG (or larger) wire to the remote turn-on lead of the head unit.

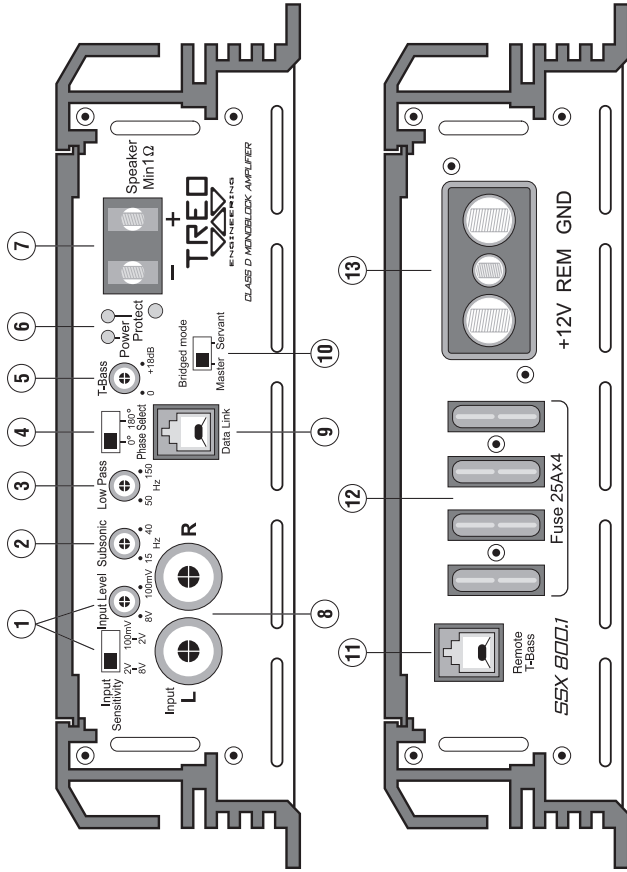
- 7** Connect the speaker(s) as per the wiring diagrams in this manual. We recommend using 12AWG speaker wire.
- 8** Mount the remote T-Bass level control in the car where it can easily be reached from the driver's seat. Run the cable to the amplifier and plug in the connector.
- 9** Using RCA interconnect cables, connect all line inputs per the wiring diagrams which follow. If possible, keep the RCA cables away from the 12v power and ground wiring.
- 10** Set the controls as described in the following sections of manual.

TREO TIP

This amplifier is designed to run with a minimum load of 1 Ohm. Operating this amplifier with a load or speaker impedance less than 1 Ohm could result in poor sound quality and/or damage to amplifier.

FRONT AND REAR CONNECTIONS AND AUDIO CONTROLS

The front panel of the SSX 800.1 contains connections for RCA Inputs, Speaker and Audio Controls as shown below.



- 1) SENSITIVITY RANGE SELECTOR AND CONTROL.
- 2) SUBSONIC (HP) FILTER FREQUENCY CONTROL.
- 3) LOW PASS Crossover FREQUENCY CONTROL.
- 4) PHASE SELECT SWITCH.
- 5) T-Bass CONTROL.
- 6) POWER AND PROTECT LED INDICATORS.
- 7) GOLD PLATED SPEAKER TERMINAL BLOCK.
- 8) GOLD PLATED RCA INPUTS.
- 9) DATA LINK CONNECTOR.
- 10) BRIDGE MODE SELECTOR SWITCH.
- 11) REMOTE T-Bass CONNECTOR.
- 12) FUSE BANK
- 13) POWER, REMOTE, GROUND INPUT BLOCK.

SENSITIVITY RANGE SELECTOR AND CONTROL – The switch allows you to select and adjust the nominal operating level of the amplifier. The range is selectable from either 100 mV to 2.0 V, or 2 V, to 8.0 V.

SUBSONIC FILTER – This allows you to tune the response of the amplifier at very low frequencies. This can increase efficiency of your system and even protect your drivers from over excursion in vented boxes.

LOW PASS FREQUENCY CONTROL – This allows you to tune the response of the amplifier at higher BASS frequencies to match your systems requirements.

PHASE SWITCH – Used to invert the Phase of the output to the speaker.

T-Bass CONTROL – Used to tune amplifier response by adding up to 18 decibels of Boost at 42 HZ.

POWER and PROTECT led indicators – When the unit is powered on and operating correctly the POWER led will illuminate. When the unit is on but in a fault condition the PROTECT led will illuminate.

SPEAKER TERMINAL BLOCK – GOLD PLATED solid brass machined terminals for delivering very high current to the speakers.

GOLD PLATED RCA INPUTS – The RCA input terminals are GOLD PLATED to ensure the highest quality contacts and the lowest noise in your audio system.

DATA LINK – The best way to use two amplifiers is to use the DATA LINK cable provided. This feature synchronizes the POWER SUPPLY and HIGH CURRENT OUTPUT STAGE of Servant amplifier to the MASTER amplifier. This in turn increases efficiency, and SPL while reducing noise and eliminating the need for any adjustments of Servant amplifier controls.

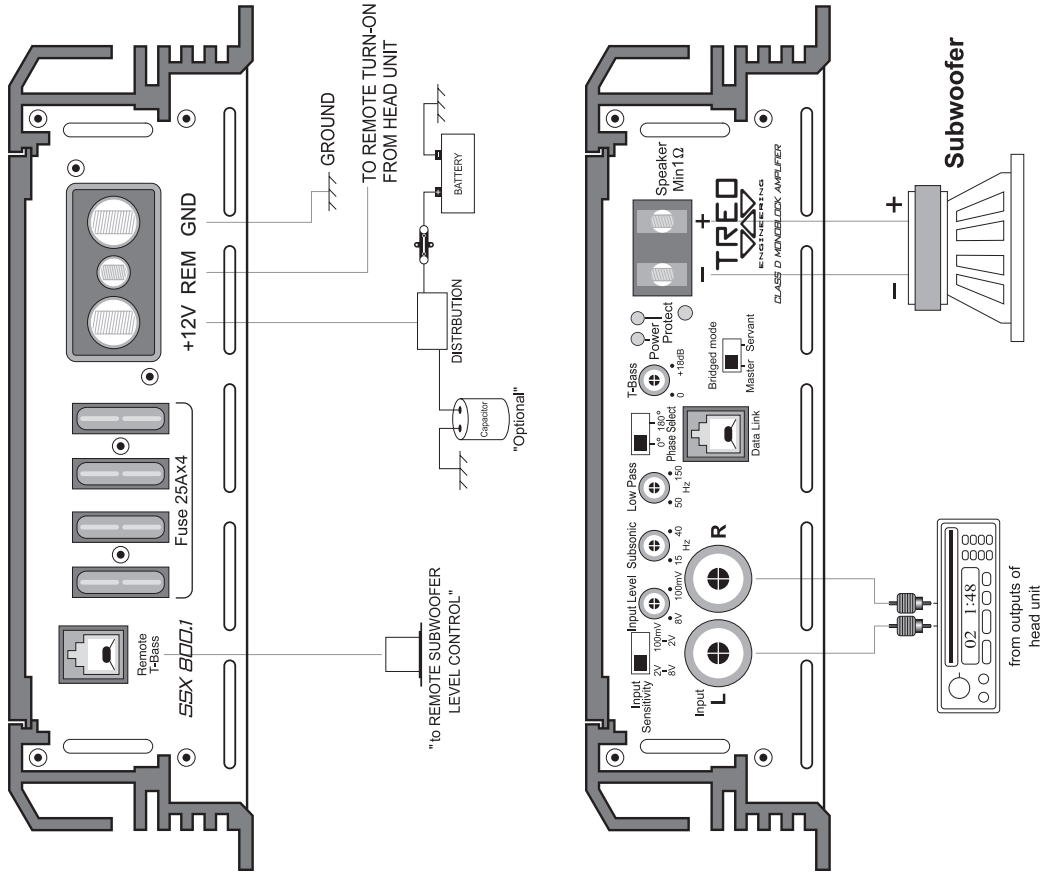
BRIDGE MODE SELECTOR SWITCH – For installations using one amplifier set this to MASTER. When installations include two amplifiers setting this switch to SERVANT (in conjunction with using the DATA LINK CABLE) will cause the servant amplifier to function identical to the MASTER amplifier.

REMOTE T-Bass CONTROL – Use this to control BASS levels from the comfort of your drivers seat.

TREO TIP

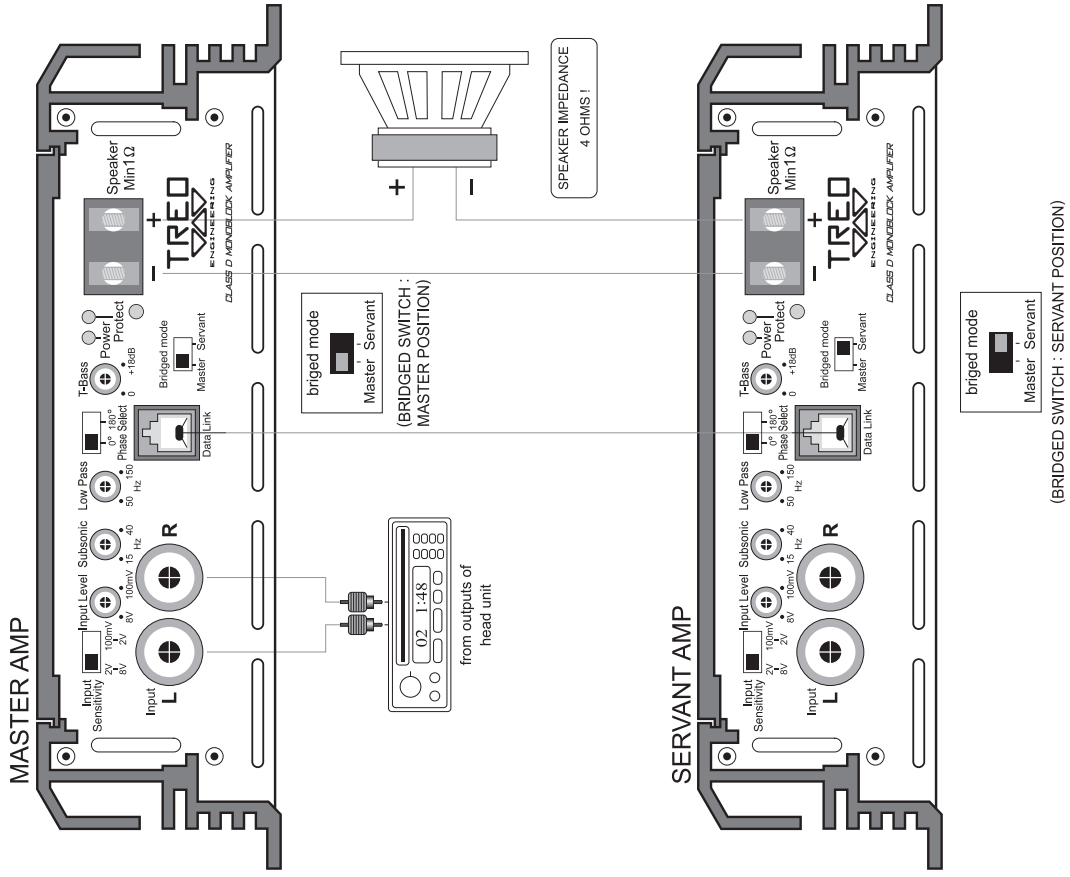
FUSE BANK – Replace with same value.

POWER, REMOTE, GROUND INPUT BLOCK – Battery power, Ground, and Remote input connections are made here.



"Note - The amplifier may get its input signal from a head unit or signal processors subwoofer output."

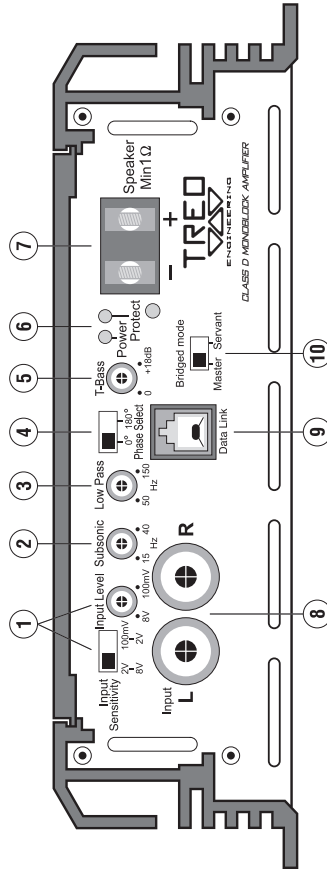
FOR BRIDGING OF TWO AMPLIFIERS



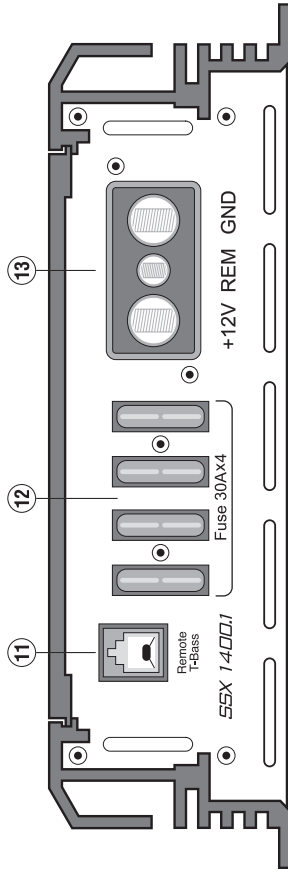
"Note - Bridging two amplifiers can be done only between two amplifiers of the same model number."

FRONT AND REAR CONNECTIONS AND AUDIO CONTROLS

The front panel of the SSX 1400.1 contains connections for RCA Inputs, Speaker and Audio Controls as shown below.



The rear panel contains connections for the fuses, power cable, remote turn-on and the remote T-Bass controller.



- 1) SENSITIVITY RANGE SELECTOR AND CONTROL.
- 2) SUBSONIC (HP) FILTER FREQUENCY CONTROL.
- 3) LOW PASS Crossover FREQUENCY CONTROL.
- 4) PHASE SELECT SWITCH.
- 5) T-Bass CONTROL.
- 6) POWER AND PROTECT LED INDICATORS.
- 7) GOLD PLATED SPEAKER TERMINAL BLOCK.
- 8) GOLD PLATED RCA INPUTS.
- 9) DATA LINK CONNECTOR.
- 10) BRIDGE MODE SELECTOR SWITCH.
- 11) REMOTE T-Bass CONNECTOR.
- 12) FUSE BANK
- 13) POWER, REMOTE, GROUND INPUT BLOCK.

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PHASE SWITCH – Used to invert the Phase of the output to the speaker.

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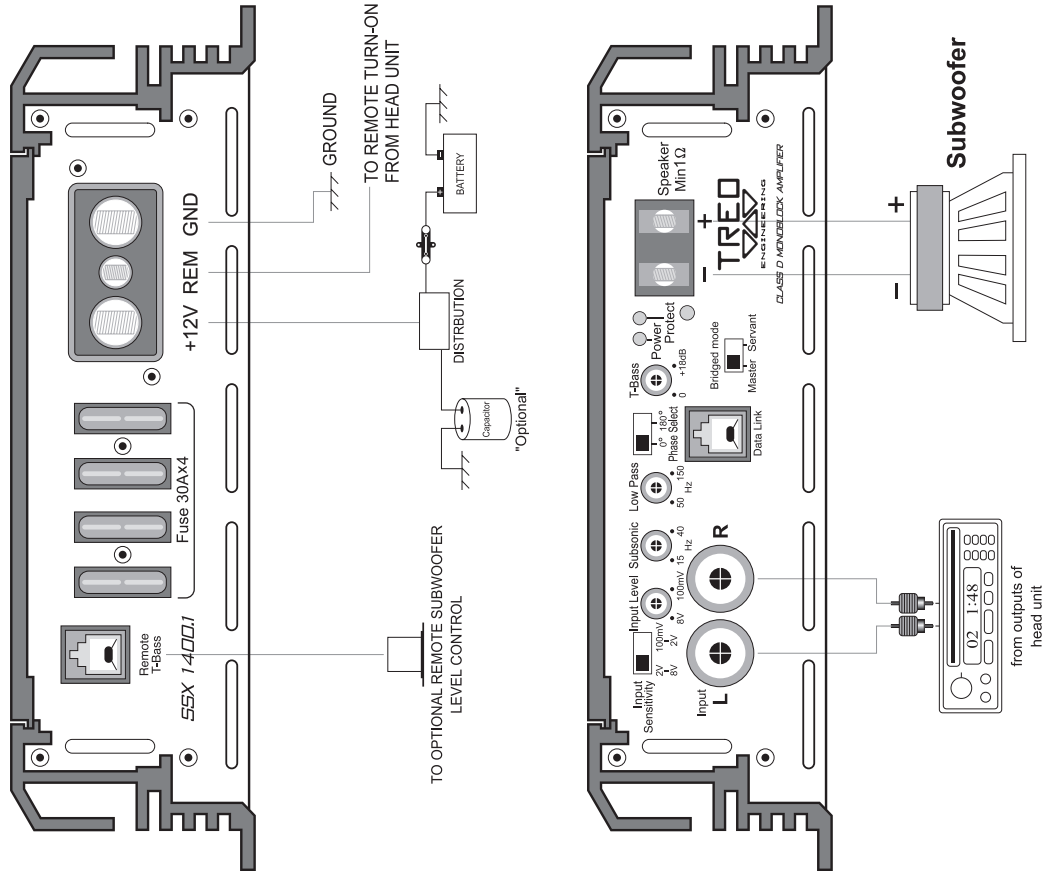
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REMOTE T-Bass CONTROL – Use this to control BASS levels from the comfort of your drivers seat.

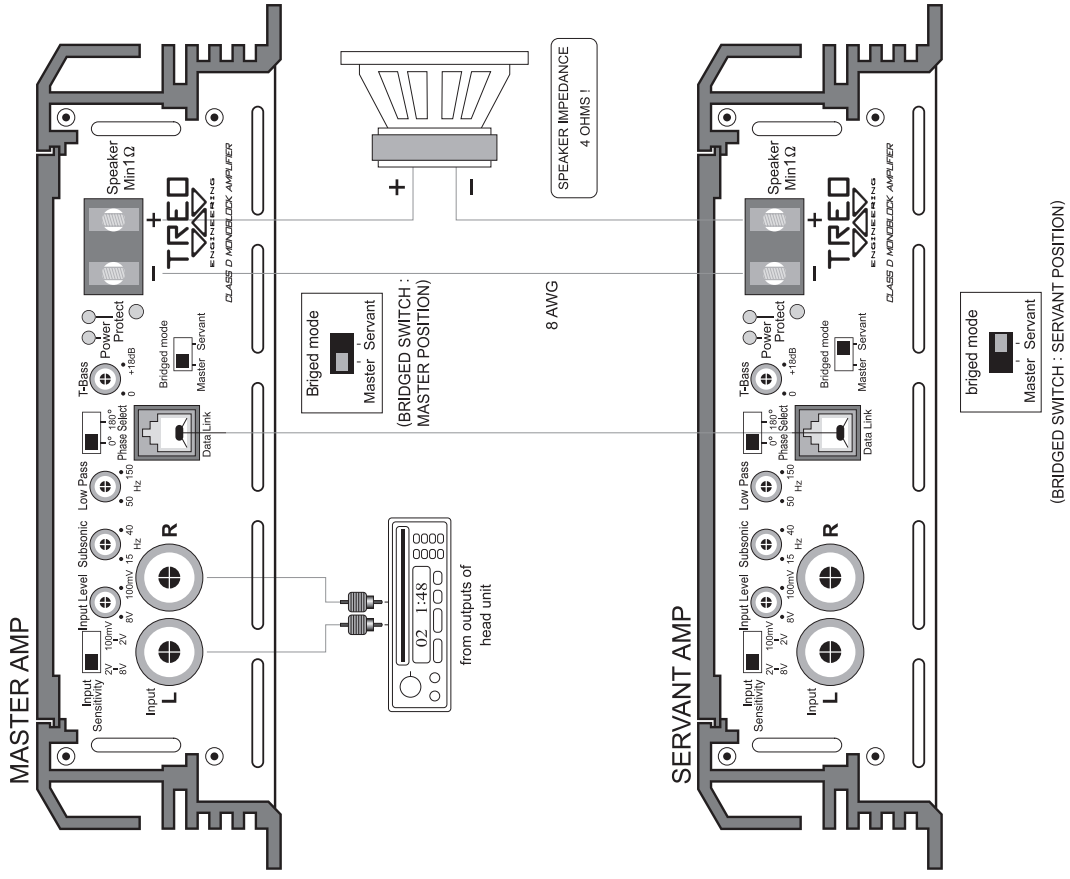
TREO TIP

FUSE BANK – Replace with same value.

POWER, REMOTE, GROUND INPUT BLOCK – Battery power, Ground, and Remote input connections are made here.



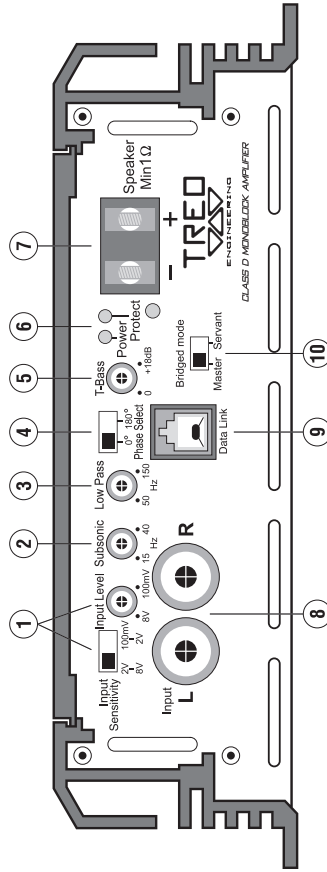
"Note - The amplifier may get its input signal from a head unit or signal processors subwoofer output."



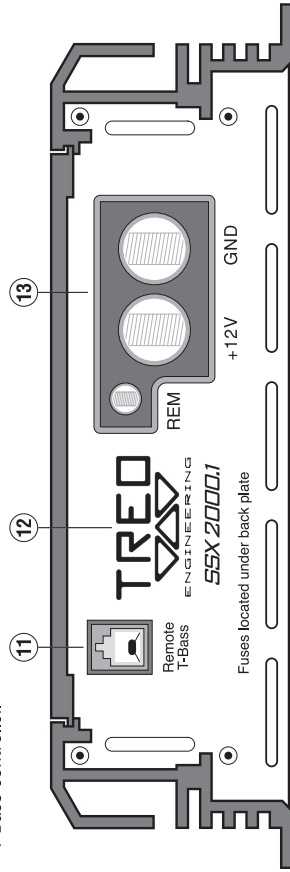
"Note - The amplifier may get its input signal from a head unit or signal processors subwoofer output."

FRONT AND REAR CONNECTIONS AND AUDIO CONTROLS

The front panel of the 2000.1 contains connections for RCA Inputs, Speaker and Audio Controls as shown below.



The rear panel contains connections for the fuses, power cable, remote turn-on and the remote T-Bass controller.



- 1) SENSITIVITY RANGE SELECTOR AND CONTROL.
- 2) SUBSONIC (HP) FILTER FREQUENCY CONTROL.
- 3) LOW PASS Crossover FREQUENCY CONTROL.
- 4) PHASE SELECT SWITCH.
- 5) T-Bass CONTROL.
- 6) POWER AND PROTECT LED INDICATORS.
- 7) GOLD PLATED SPEAKER TERMINAL BLOCK.
- 8) GOLD PLATED RCA INPUTS.
- 9) DATA LINK CONNECTOR.
- 10) BRIDGE MODE SELECTOR SWITCH.
- 11) REMOTE T-Bass CONNECTOR.
- 12) FUSE BANK (LOCATED UNDER BACK PLATE)
- 13) POWER, REMOTE, GROUND INPUT BLOCK.

"1/0 Power and ground cable required for stable operation"

SENSITIVITY RANGE SELECTOR AND CONTROL – The switch allows you to select and adjust the nominal operating level of the amplifier. The range is selectable from either 100 mV to 2.0 V, or 2 V, to 8.0 V.

SUBSONIC FILTER – This allows you to tune the response of the amplifier at very low frequencies. This can increase efficiency of your system and even protect your drivers from over excursion in vented boxes.

LOW PASS FREQUENCY CONTROL – This allows you to tune the response of the amplifier and eliminate high frequencies that subwoofers cannot utilize.

PHASE SWITCH – Used to invert the phase of the output to the speaker.

T-Bass CONTROL – Used to tune amplifier response by adding up to 18 decibels of Boost at 42 HZ.

POWER and PROTECT led indicators – When the unit is powered on and operating correctly the POWER led will illuminate. When the unit is on but in a fault condition the PROTECT led will illuminate.

SPEAKER TERMINAL BLOCK – GOLD PLATED solid brass machined terminals for delivering very high current to the speakers.

GOLD PLATED RCA INPUTS – The RCA input terminals are GOLD PLATED to ensure the highest quality contacts and the lowest noise in your audio system.

DATA LINK – The best way to use two amplifiers is to use the DATA LINK cable provided. This feature synchronizes the POWER SUPPLY and HIGH CURRENT OUTPUT STAGE of Servant amplifier to the MASTER amplifier. This in turn increases efficiency, and SPL while reducing noise and eliminating the need for any adjustments of Servant amplifier controls.

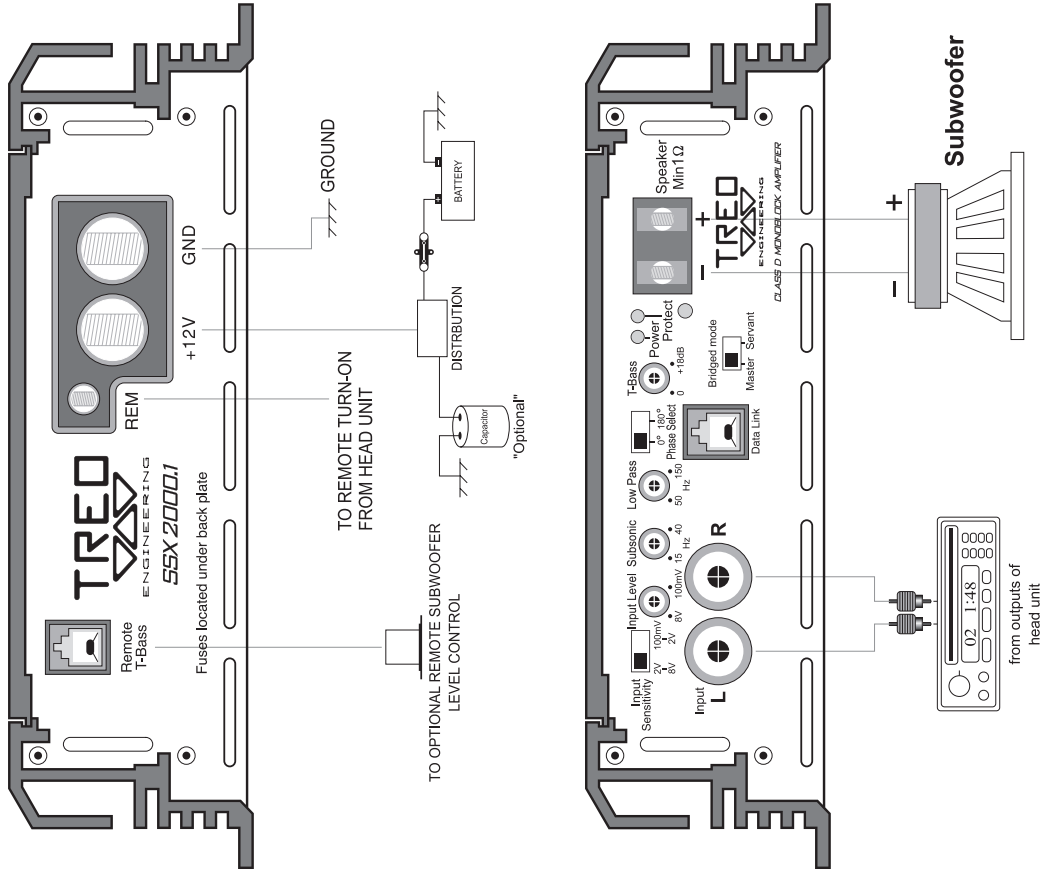
BRIDGE MODE SELECTOR SWITCH – For installations using one amplifier set this to MASTER. When installations include two amplifiers setting this switch to SERVANT (in conjunction with using the DATA LINK CABLE) will cause the servant amplifier to function identical to the MASTER amplifier.

REMOTE T-Bass CONTROL – Use this to control BASS levels from the comfort of your drivers seat.

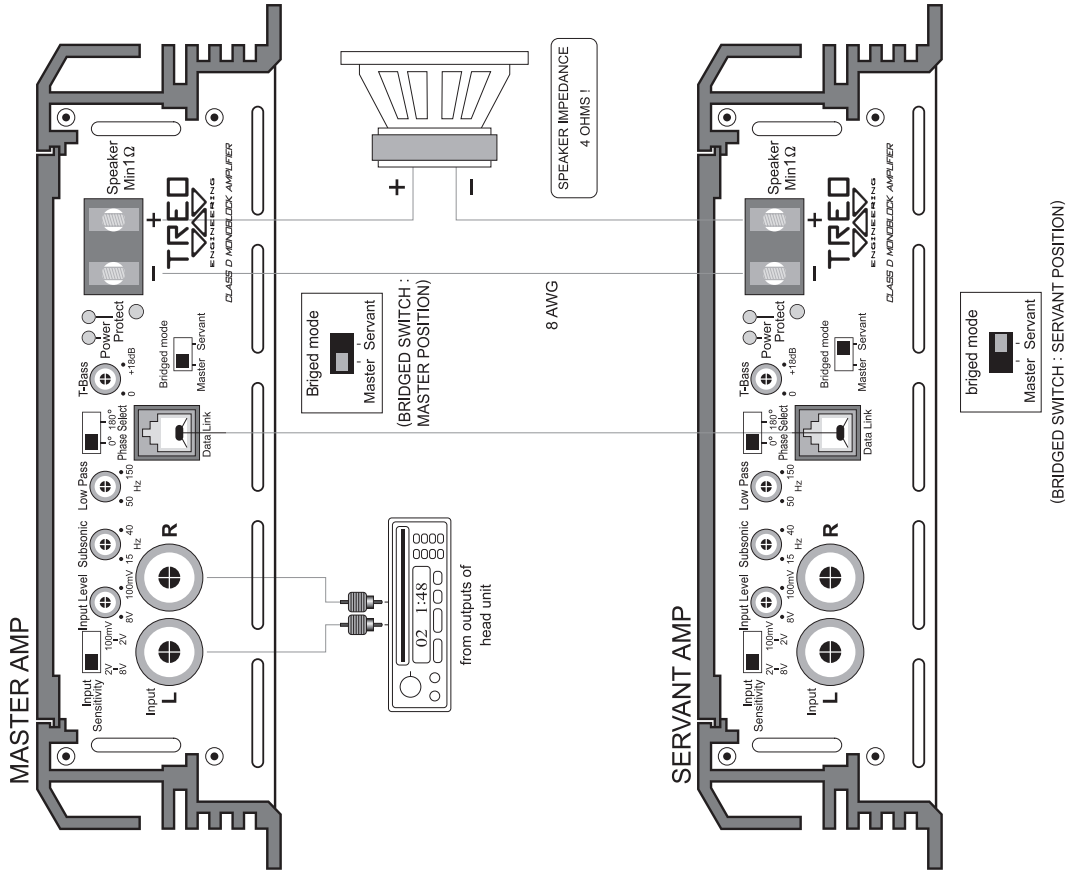
TREO TIP

FUSE BANK – Replace with same value.

POWER, REMOTE, GROUND INPUT BLOCK – Battery power, Ground, and Remote input connections are made here.



"Note - The amplifier may get its input signal from a head unit or signal processors subwoofer output."



Bringing two amplifiers can be done only between two amplifiers of the same model number.

Specifications

	SSX 800.1	SSX 1400.1	SSX 2000.1
RMS Power, into 4 Ohms	300Watts x 1	500Watts x 1	750Watts x 1
MAX Power, into 2 Ohms	500Watts x 1	900Watts x 1	1300Watts x 1
MAX Power, into 1 Ohms	800Watts x 1	1400Watts x 1	2000Watts x 1
THD at 1 Watt, 4 Ohms	0.30%	0.30%	0.30%
THD at Rated Power	0.50%	0.50%	0.50%
Signal-to-Noise Ratio, below rated power output	100dB	100dB	100dB
Frequency Response, at 1 Watt, 4 Ohm	10Hz to 250Hz (+/-3dB)	10Hz to 250Hz (+/-3dB)	10Hz to 250Hz (+/-dB)
Frequency Response, at rated power, 4 Ohm	20Hz to 250Hz (+/-3dB)	20Hz to 250Hz (+/-3dB)	20Hz to 250Hz (+/-3dB)
Damping Factor at 20Hz, 4 Ohm	400	400	400
Crossover : Low Pass	50Hz-150Hz, 24dB/Octave	50Hz-150Hz, 24dB/Octave	50Hz-150Hz, 24dB/Octave
Crossover : Subsonic (High Pass)	15Hz-40Hz, 24dB/Octave	15Hz-40Hz, 24dB/Octave	15Hz-40Hz, 24dB/Octave
T-Bass Boost at 42 Hz	0-12dB	0-12dB	0-12dB
Phase Control	0 to 180°	0 to 180°	0 to 180°
Input Sensitivity	100mV to 2V / 2V to 8V	100mV to 2V / 2V to 8V	100mV to 2V / 2V to 8V
Input Impedance	10 kohm	10 kohm	10 kohm
Peak Current consumption, at rated power into 1 Ohm	80 Amperes	120 Amperes	160 Amperes
Dimensions	18"L x 7"W x 2.36"H	20"L x 7"W x 2.36"H	22"L x 7"W x 2.36"H
Fuse Rating	ATC 25A x 4	ATC 30A x 4	MFU 80A x 2