



GT

4-Channel Amplifier Owners Manual

GT-475

GT-4100

Introduction

Thank you for choosing Boston Acoustics® and congratulations on your purchase of the Boston GT® Amplifier. If you own other Boston products, the outstanding audio performance and ease-of-use of the GT Amplifier should come as no surprise. If you're new to Boston, welcome – you've made a great choice.

Table of Contents

Parts list	3
Specifications	
Connections	4
Top panel removal / installation	
Controls	5
Status LEDs	
Installation - General	6
Before you install	
Battery and charging system	
Wire routing	
Mounting location	
Passenger & trunk compartment mounting	
Multi-Position Mounting Feet	
Venting	
Installation - Wiring	7
Amplifier fuses	
Wire gauge	
Power 12v and ground (GND) connection	
Remote input connection	
Speaker output connection	
Mono subwoofer operation	
Tuning The Amplifier - Front and Rear Speakers	8
Music	
Front signal routing switch	
Input sensitivity control	
Highpass and lowpass crossover controls	
Head unit	
Volume	
4-channel highpass operation switch configuration diagram	
Input sensitivity control	
Crossover controls	
Q-Tune™ control	
4-channel operation wiring configuration diagram	
Tuning The Amplifier - Front Speakers and Subwoofers	10
Front signal routing switch	
Head unit	
Volume	
Input sensitivity control	
Highpass crossover control	
Q-Tune™ control	
Rear input switch	
Lowpass crossover control	
GT-RSL	
Bridged operation wiring configuration diagram	
Amplifier Troubleshooting Guide	12
Service Information	

Parts List

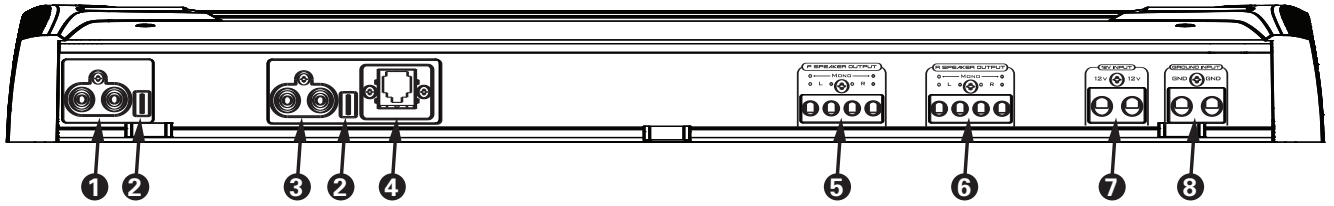
Included Hardware:	GT-475	GT-4100
<i>Installation Manual</i>	1	1
<i>Female Quick-Connect Terminal</i> <i>(for remote turn-on input)</i>	1	1
<i>2mm Hex Wrench</i>	1	1
<i>3mm Hex Wrench</i>	1	1
<i>Mounting Screws</i>	4	6

Specifications

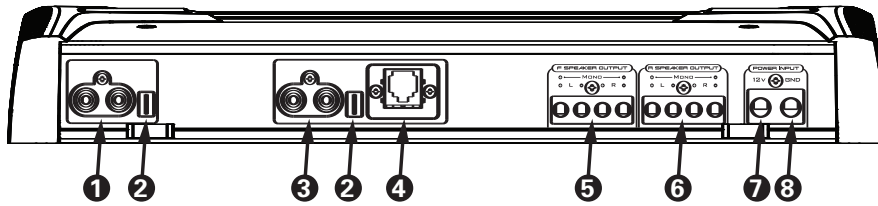
Technical Specifications:	GT-475	GT-4100
<i>Rated Power (CEA-2006-A):</i>		
<i>@ 4-Ohm (Stereo):</i>	75 Watts x 4	100 Watts x 4
<i>@ 2-Ohm (Stereo)</i>	120 Watts x 4	150 Watts x 4
<i>@ 2-Ohm (Mono)</i>	250 Watts x 2	450 Watts x 2
<i>Mixed Operation (CEA-2006-A):</i>		
<i>@ 4-Ohm (Stereo) & 2-ohm (Mono):</i>	75 W x 2, 250 W x 1	100 W x 2, 450 W x 1
<i>Rated Power (12v):</i>		
<i>@ 4-Ohm (Stereo):</i>	65 Watts x 4	85 Watts x 4
<i>@ 2-Ohm (Mono)</i>	200 Watts x 2	330 Watts x 2
<i>Frequency Response (-3dB):</i>	10Hz–95kHz	10Hz–95kHz
<i>Signal-to-Noise Ratio (A Weighted):</i>	>100dB	>100dB
<i>THD+N:</i>	0.03	0.03
<i>Highpass Crossover:</i>		
<i>Frequency Range:</i>	20Hz - 350Hz	20Hz - 350Hz
<i>Slope (dB Per Octave):</i>	12dB	12dB
<i>Lowpass Crossover (Rear Channel Only):</i>		
<i>Frequency Range:</i>	50Hz - 350Hz	50Hz - 350Hz
<i>Slope (dB Per Octave):</i>	12dB	12dB
<i>Signal Voltage Input Range:</i>	200mv - 8v	200mv - 8v
<i>Fuse Amp Rating:</i>	40 Amp	80 Amp
<i>Dimensions:</i>		
<i>Width:</i>	14 ³ / ₄ " (375mm)	22 ¹ / ₄ " (566mm)
<i>Height:</i>	2 ³ / ₈ " (61mm)	2 ³ / ₈ " (61mm)
<i>Depth:</i>	9" (229mm)	9" (229mm)

Connections

GT-4100

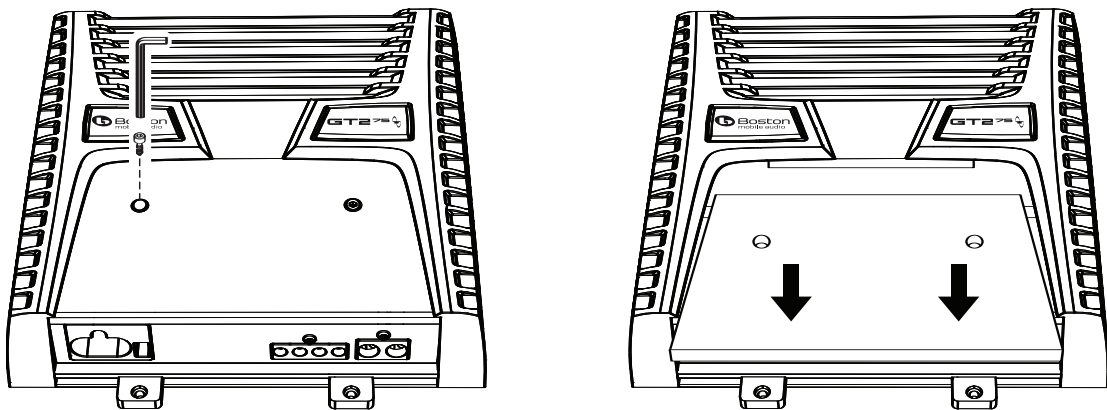


GT-475



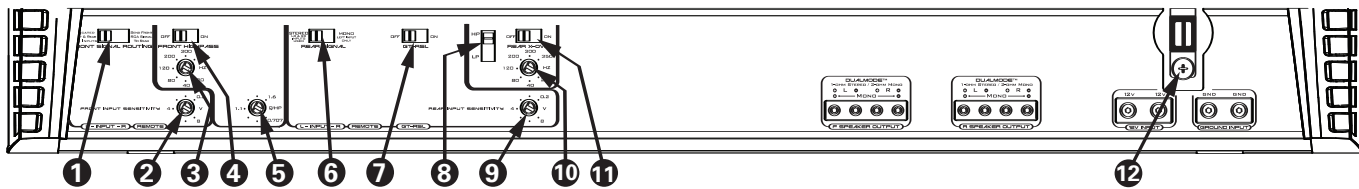
- ❶ Front RCA Input
- ❷ Remote Turn-On (female spade connector supplied)
- ❸ Rear RCA Input
- ❹ Remote Gain Port (refer to GT-RSL manual for installation instruction)
- ❺ Front Left/Right/Mono Speaker Outputs (12-gauge accepted)
- ❻ Rear Left/Right/Mono Speaker Outputs (12-gauge accepted)
- ❼ 12v Power Input (4-gauge accepted)
- ❽ Ground Wire Input (4-gauge accepted)

Top Panel Removal / Installation

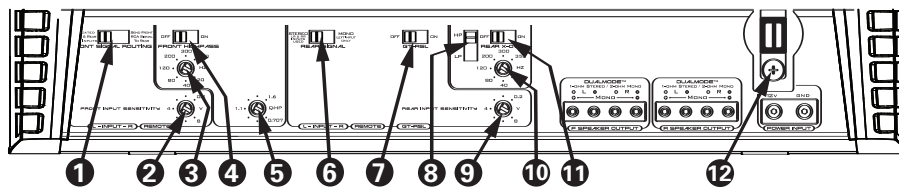


The cover panel is secured with two (2) 3mm screws. Once unscrewed, pull panel forward, once clear of the corners of the end panels, it will lift off. Reverse to reinstall.

GT-4100

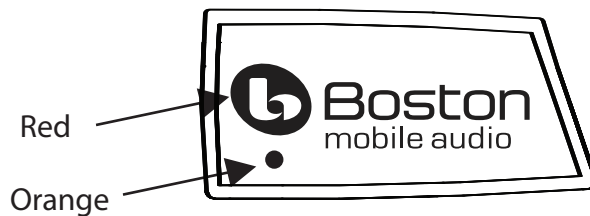


GT-475



- ❶ Signal Routing Switch (Sends Front RCA Signal to Rear Channels)
- ❷ Front Channel Input Sensitivity (250mv to 8.0v - continuously variable)
- ❸ Front Channel Highpass Frequency Adjustment (20Hz to 350Hz - variable)
- ❹ Front Channel Highpass Crossover OFF/ON Switch
- ❺ Front Channel Highpass Crossover Q-Tune™ Adj. (0.707 to 1.6 - variable)
- ❻ Rear Channel Stereo / Mono Switch
- ❼ Rear Channel Remote Gain OFF / ON Switch (ON when using GT-RSL)
- ❽ Rear Channel Channel Highpass / Lowpass Crossover Selection Switch
- ❾ Rear Channel Input Sensitivity (250mv to 8.0v - continuously variable)
- ❿ Rear Channel HP / LP Frequency Adjustment (20Hz to 350Hz - variable)
- ⓫ Rear Channel Crossover OFF/ON Switch
- ⓬ Fuse (replace with same value mini ANL only, refer to specifications on page 3)

Status LEDs



The Boston Logo will illuminate "Red" under normal operating conditions.

The Orange LED (not visible unless lit) will illuminate during start-up and under fault conditions. If this is illuminated after start-up, please refer to troubleshooting on page 12.

Installation - General

WARNING! Before driving the amplifier mounting screws through any surface, be sure of what is behind that surface. Check for the gas tank, brake lines, and any vehicle wiring harness. Never run wires outside or under the vehicle or where they could become broken or interfere with the safe operation of the vehicle.

Before You Install

Before you install the unit, disconnect the negative (-) battery cable in the engine compartment of the vehicle. Doing so will prevent damage to both the electrical system of the vehicle and the amplifier during installation.

Battery and Charging System

In order for the amplifier to function correctly, the electrical system of the vehicle should be professionally checked for overall electrical capacity. When used, the amplifier will increase the demand on the battery and alternator. Therefore, both should be thoroughly evaluated before installing the amplifier to ensure they are in normal operating condition and able to handle the increased demand the amplifier will present to the vehicle's electrical system.

Wire Routing

Do not run the power wire near any low-level signals or audio cables such as the RCAs from the head unit. Noise can be introduced into the amplifier when this occurs. It is helpful to diagram the wire layout first before any installation is initiated.

Choose the Mounting Location

Plan your installation so that the amplifier is mounted where adequate ventilation is available. *Never mount an amplifier in the engine compartment of a vehicle!*

WARNING! Before driving the mounting screws through any surface, be sure of what lies behind that surface. Check for gas tank, brake lines, and any vehicle wiring harness.

Passenger and Trunk Compartment Mounting

If the amplifier is mounted under a seat, be sure that the vents do not become blocked. Do not allow seat padding or other obstructive material to press down on the amplifier.

All Boston GT® amplifiers have top panel controls. If the amplifier is mounted under a seat, position the amplifier so the cover panel can be removed with the seat forward or back to allow adjustment of the audio settings.

When mounting in a trunk, choose a location that will be protected from sliding cargo or other materials. Mount the amplifier to solid surfaces only. Do not mount to plastic trim panels. Do not mount the amplifier with Velcro, double-stick tape, or by wedging into position. Amplifier should be mounted using the movable mounting feet and the provided mounting screws.

Multi-Position Mounting Feet

The mounting feet are designed to slide in both directions to clear installation obstructions on the mounting surface.

Venting (Side and Rear)

The cooling vents must be kept clear of obstructions once the amplifier is installed. If the vents are obstructed, this could lead to premature thermal shutdown or amplifier failure.

Amplifier Fuses

Although the amplifier has an internal fuse, additional fuse protection should be installed as close as possible to the battery on the positive (+) power wire going to the amplifier. An inline fuse should be installed at no more than 18" (46cm) on the positive (+) power wire. The rating of the inline fuse should equal the value of the internal fuse of the amplifier if only the single amplifier is connected to this wire. If other devices are connected to this wire, the fuse value should be of sufficient capacity to handle the demand.

Wire Gauge

The amplifier accepts up to 4-gauge stripped wire at the DC power and ground input terminals, and 4-gauge is recommended. Wire runs should be kept to the minimum practical length.

Power 12v and Ground (GND) Connection

Strip approximately $\frac{5}{8}$ " (16mm) of insulation. The positive (+) power wire is installed into the amplifier terminal marked "12v". The negative (-) wire is installed into the terminal marked "GND". The ground wire should be as short as possible and connected directly to the chassis of the vehicle. Make sure that the chassis connection point is free of rust, grease, dirt, paint, and other materials that may insulate the ground wire from making proper connection. Tighten the 12v and GND terminals with the supplied 3mm hex wrench to secure the wire into the terminals. If the power wire must be routed through a drilled or existing hole, use a nylon panel grommet to prevent the insulation from fraying. Failure to do so could lead to an electrical short if the wire insulation is worn through and the power wire is shorted to ground.

Remote Input Connection

Use the supplied FEMALE quick-connect terminal to connect the REMOTE trigger lead from the head unit to the amplifier. Crimp connector to wire from head unit that controls remote turn-on (refer to head unit owner's manual). Once the quick-connect terminal is crimped into place, carefully push connector onto recessed MALE REMOTE terminal adjacent to the RCA input pair (refer to the diagram on page 4).

Speaker Output Connection

Prepare each wire by stripping approximately $\frac{5}{8}$ " (16mm) of insulation. The positive (+) speaker wires are installed into the amplifier terminals marked "SPEAKER OUTPUT" / "+" (refer to the diagram on page 4). The negative (-) speaker wires are installed into the amplifier terminals marked "SPEAKER OUTPUT" / "-". Tighten the "SPEAKER OUTPUT", "+", and "-" terminals with the supplied 2mm hex wrench to secure the wires into the terminals. If the speaker wires must be routed through a drilled or existing hole, use a nylon panel grommet to prevent fraying the wire insulation. Failure to do so could lead to an electrical short if the wire insulation is worn through and the speaker wires are shorted to ground.

Mono Subwoofer Operation

When the amplifier is configured for mono operation, use the speaker output terminals marked for mono use (refer to the diagram on page 4).

WARNING! Subwoofer impedance must not fall below 2 ohms when in MONO mode.

Tuning The Amplifier - Front and Rear Speakers

1) Music

The material chosen for system tuning must be both clear in recording quality and dynamic in amplitude. Many audiophile "test" discs have musical tracks with both of these characteristics and should be used.

2) Front Signal Routing Switch

If using two sets of RCAs (independent front and rear RCAs), set the switch to DEDICATED FRONT AND REAR INPUTS . If you are using one set of RCAs for both front and rear channels, set the switch to SEND FRONT RCA SIGNAL TO REAR. (refer to the diagram on page 5).

2) Input Sensitivity Control

Turn both front and rear controls all the way counterclockwise (minimum position). In this position, the amplifier will be less sensitive to the input signal from the head unit (refer to the diagram on page 5).

3) Highpass & Lowpass Crossover Controls

Crossovers should be turned "OFF" during this phase of setup . Move the HIGHPASS and X-OVER switches to the "OFF" position (refer to the diagram on page 5), with these settings, full-range signal is sent to the speaker outputs. Start with the front channels. If over-excursion is detected from speakers, move HIGHPASS switch to "ON" and slowly rotate clockwise until over-excursion is eliminated. Repeat for the rear channels.

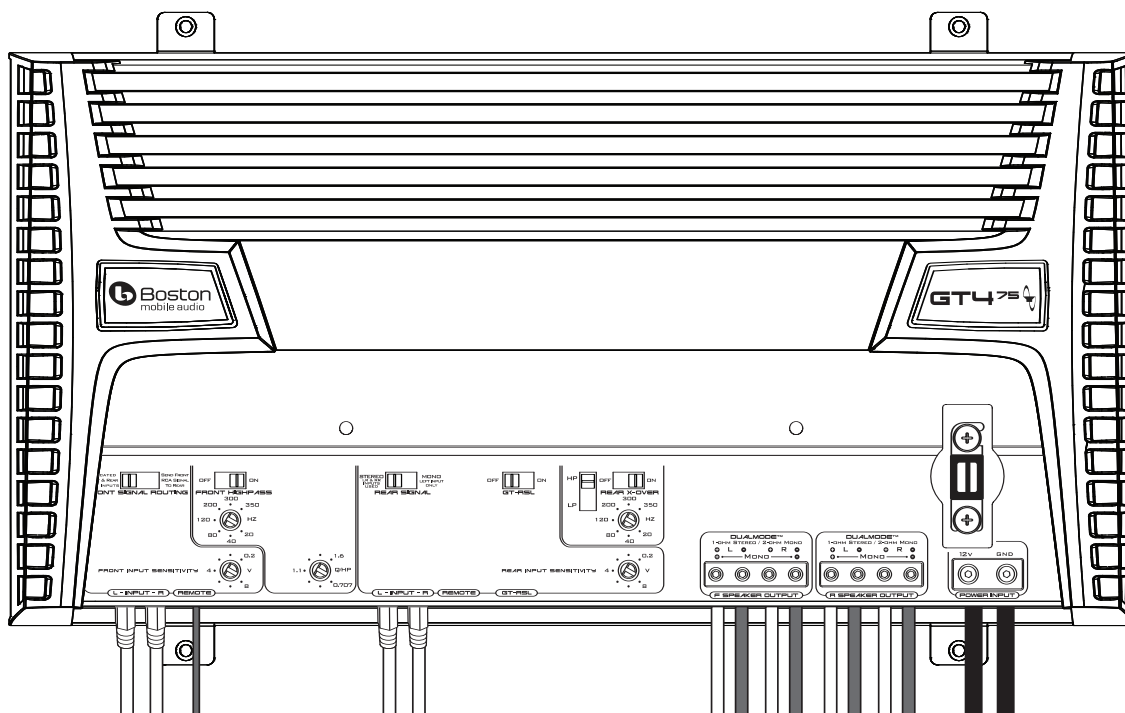
4) Head Unit

The head unit should have all controls such as bass, treble, balance, and fader set to the flat or centered position. The volume control should be at the minimum setting. If the head unit has any equalization or bass management features such as *boost*, they should be defeated at this time. Turn head unit on, and verify that the RED status LED (logo) is illuminated on the amplifier.

5) Volume

With the chosen musical track playing, turn the head unit volume control up until the maximum level of undistorted signal is heard from the speakers. (For most head units, this will be near the end of the volume control range.)

WARNING! A distorted signal from the head unit sent to the amplifier can cause loudspeaker failure at higher listening levels.



4-Channel Highpass Operation Switch Configuration Diagram

Tuning The Amplifier - Front and Rear Speakers

6) Input Sensitivity Control

Starting with the front channels, slowly rotate the control clockwise (refer to the diagram on page 5) until maximum undistorted playing level is heard from the speakers. Listen closely for bottoming from the speakers. If detected, rotate the input sensitivity control counterclockwise until it is eliminated. Repeat for the rear channels.

7) Crossover Controls

To achieve higher undistorted playing levels from the both the front and rear speakers, the highpass crossover must be engaged. Starting with the front channels, rotate the crossover control fully clockwise (refer to the diagram on page 5). The highpass crossover point is now set at 350Hz. Rotate "Q-Tune™" Control fully counterclockwise (front channels only). Move crossover switch to the right (ON) position.

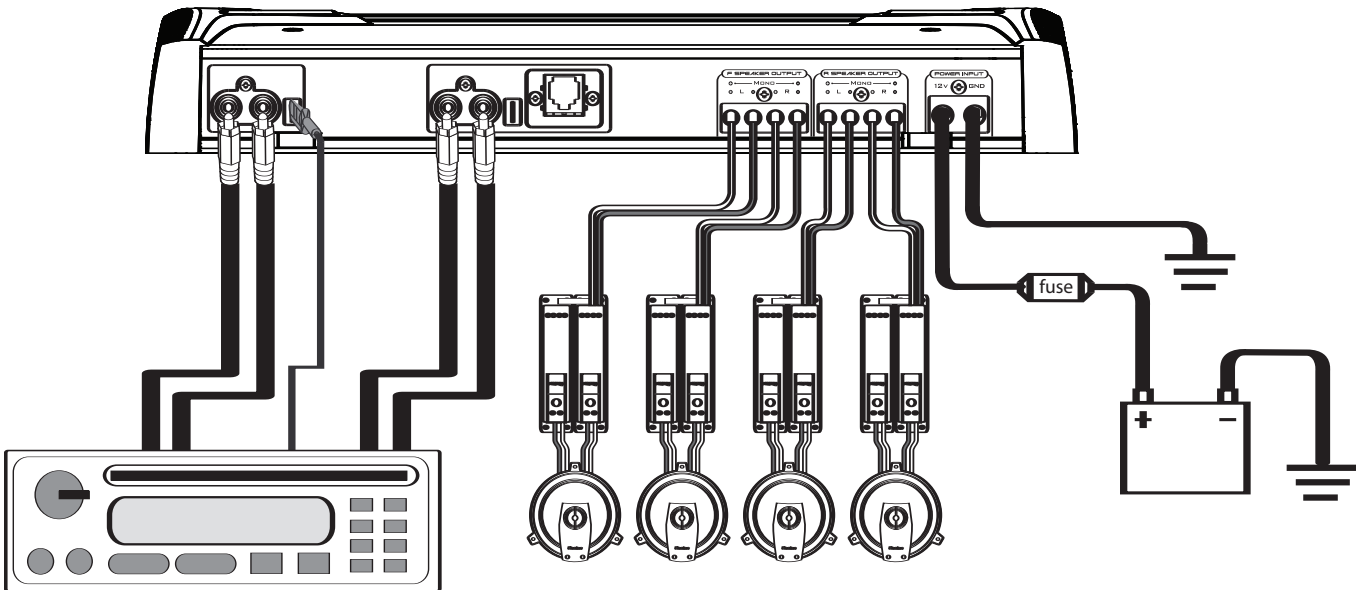
Slowly rotate the input sensitivity control clockwise until maximum undistorted playing level is heard from the speakers. Listen closely for bottoming from the speakers. If detected, rotate the input sensitivity control counterclockwise until it is eliminated. Slowly rotate the highpass crossover control counterclockwise while listening for bottoming. You are lowering the crossover point, which means that more bass signal is being sent to the speakers. If bottoming is detected, rotate the input sensitivity control counterclockwise until it is eliminated and/or rotate the Highpass crossover control clockwise to raise the crossover point. Repeat for the rear channels.

8) Q-Tune™ Control (Front Channels Only)

Once the highpass crossover point has been determined, use the Q-Tune™ control (refer to the diagram on page 5) to increase the bass information centered around the crossover point.

Setting the Q-Tune™ control is done in conjunction with setting the levels on the input sensitivity and highpass crossover frequency controls. You may find while setting the Q-Tune™ that over-excursion may be detected in the front speakers; lowering the Q-Tune™ input sensitivity or raising the highpass crossover point will eliminate this. Minor adjustments to each setting are required to fine-tune the system.

Setting the Q-Tune™ is a subtle process. It is recommended that the Q-Tune™ setting be left in the 0.7 position and adjusted only after the input sensitivity and highpass crossover ranges are known. Small adjustments to the Q-Tune™ setting are all that are required to fine-tune the system.



4-Channel Operation Wiring Configuration Diagram

Tuning The Amplifier - Front Speakers and Subwoofer (s)

1) Front Signal Routing Switch

If using two sets of RCAs (independent front and rear RCAs), set the switch to DEDICATED FRONT AND REAR INPUTS . If you are using one set of RCAs for both front and rear channels, set the switch to SEND FRONT RCA SIGNAL TO REAR. (refer to the diagram on page 5).

2) Head Unit

The head unit should have all controls such as bass, treble, balance, and fader set to the flat or centered position. The volume control should be at the minimum setting. If the head unit has any equalization or bass management features such as boost, they should be deactivated at this time. Turn head unit on, and verify that the RED status LED (logo) is illuminated on the amplifier.

3) Volume

With the chosen musical track playing, turn the head unit volume control up until the maximum level of undistorted signal is heard from the speakers. For most head units, this will be at the end of the volume control range.

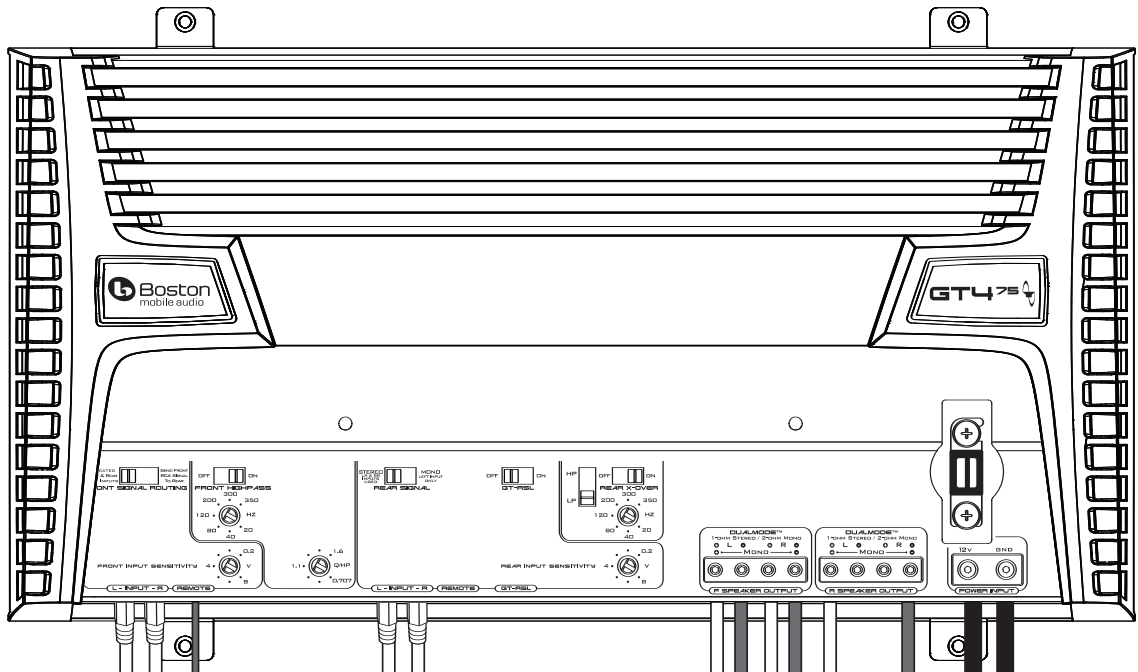
WARNING! A distorted signal from the head unit sent to the amplifier can cause speaker failure at higher listening levels.

4) Input Sensitivity Control (Front and Rear Channels)

Turn control (refer to the diagram on page 5) all the way counterclockwise (minimum position). In this position, the amplifier will be less sensitive to the input signal from the head unit. Slowly rotate this control clockwise until maximum undistorted playing level is heard from the subwoofer(s). Listen closely for faults such as bottoming from the subwoofer(s). If fault is detected, rotate input sensitivity control counterclockwise until fault is eliminated. At this point, the maximum undistorted subwoofer playing level has been defined.

5) Highpass Crossover Control (Front Channel Only)

To achieve higher undistorted playing levels from the front speakers, the highpass crossover must be engaged. Rotate the crossover control fully clockwise (refer to the diagram on page 5). The highpass crossover point is now set at 350Hz. Rotate "Q-Tune™" Control fully counterclockwise. Move crossover switch to the right (ON) position.



Bridged Lowpass with Q-Tune™ Switch Configuration Diagram

Tuning The Amplifier - Front Speakers and Subwoofer (s)

Highpass Crossover Control (Front Channel Only) Cont.

Slowly rotate the input sensitivity control clockwise until maximum undistorted playing level is heard from the speakers. Listen closely for bottoming from the speakers. If detected, rotate the input sensitivity control counterclockwise until it is eliminated. Slowly rotate the highpass crossover control counterclockwise while listening for bottoming. You are lowering the crossover point, which means that more bass signal is being sent to the speakers. If bottoming is detected, rotate the input sensitivity control counterclockwise until it is eliminated and/or rotate the Highpass crossover control clockwise to raise the crossover point.

6) Q-Tune™ Control (Front Channel Only)

Once the highpass crossover point has been determined, use the Q-Tune™ control (refer to the diagram on page 5) to increase the bass information centered around the crossover point.

Setting the Q-Tune™ control is done in conjunction with setting the levels on the input sensitivity and highpass crossover frequency controls. You may find while setting the Q-Tune™ that over-excursion may be detected in the front speakers; lowering the Q-Tune™ input sensitivity or raising the highpass crossover point will eliminate this. Minor adjustments to each setting are required to fine-tune the system.

Setting the Q-Tune™ is a subtle process. It is recommended that the Q-Tune™ setting be left in the 0.7 position and adjusted only after the input sensitivity and highpass crossover ranges are known. Small adjustments to the Q-Tune™ setting are all that are required to fine-tune the system.

7) Rear Input Switch

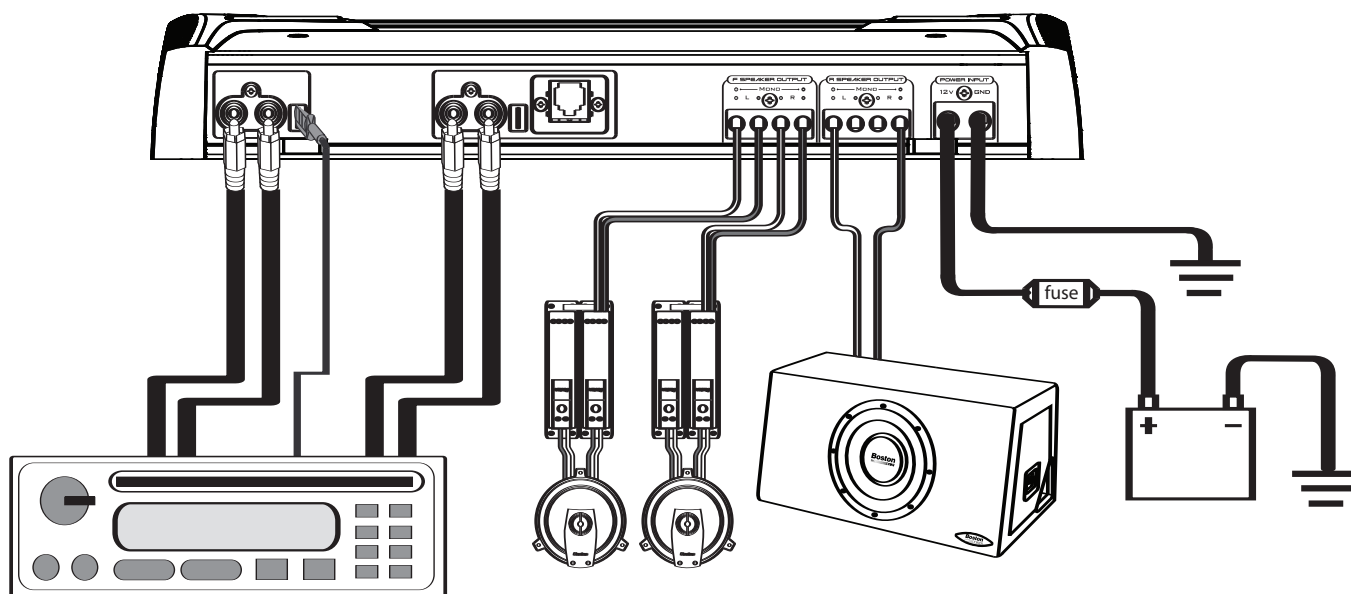
For dual RCA Input, set switch to STEREO. If one RCA is used, move switch to the right-hand (MONO) position (refer to the diagram on page 5)

8) Lowpass Crossover Control (Rear Channels Only)

Move the selector switch to "ON" (refer to the diagram on page 5). In this setting, lowpass signal is sent to the speaker outputs. Experiment with the crossover point settings while the subwoofer is active. A higher setting will increase the perceived output, and a lower setting will make the bass response more omnidirectional.

9) RSL Control (Rear Channels Only)

The remote level control (GT-RSL) gives you independent level adjustment of the subwoofer's output level beyond the standard system volume control. Please refer to the RSL's manual for installation instruction. The GT-RSL is available separately, please consult your authorized Boston Acoustics dealer.



3 Channel Operation Wiring Configuration Diagram

Amplifier Troubleshooting Guide

Status LEDs on Amplifier not Lit—Head Unit (Source) Turned “ON”

- Verify Remote turn-on wire from source to amplifier has proper voltage
Power (B+) connections at amplifier, terminal blocks, and battery are secure
Ground (GND) connections at amplifier and vehicle chassis are secure
Battery B+ fuse and amplifier fuse are OK
B+ at battery and B+ at amplifier have proper voltage

Status LEDs Lit, no Output from Speakers—Speakers in Normal Operating Condition

- Verify High-level cables from speaker(s) to amplifier are securely connected
RCA cables from amplifier to source are securely connected
Sensitivity adjustment on amplifier is correctly adjusted

Engine Noise from Speaker(s)

- Turn source “OFF” and disconnect RCA cables at amplifier
If noise stops, check equipment and cables leading to amplifier
Verify RCA cables are of good quality with no breakage to internal shields
RCA cables from source to amplifier are not run alongside power

Amplifier Output Distorted—Music not Recorded with Intentional Distortion

- Verify Source output to amplifier is not distorted
Amplifier input sensitivity is correctly adjusted

Amplifier Shutting Down, Red Blinking and Orange LEDs Lit—Amplifier in Thermal Protection Mode

- Verify Amplifier is mounted with adequate air circulation around vents
Amplifier does not have obstructions blocking back or side panel vents
Amplifier is not mounted under carpet
Speakers meet correct impedance for application (mono or stereo hookup)

Amplifier not Turning “ON”, Orange LED Lit—Amplifier not Connected to a Shorted Speaker

- Verify Speaker crossover is not defective
High-level cables from speaker to amplifier are not shorted

Amplifier not Turning And Both LED (s) Blinking—Speakers, Crossovers, and Cable OK

- Verify Internal fuse needs to be replaced
Replace fuse with fuse of same value

Amplifier not Turning “ON”, Orange LED Lit—Speakers, Crossovers, and Cable OK

- Amplifier requires service

If Service Seems Necessary

First, contact the dealer from whom you purchased the product, or contact us via e-mail at:

USA and Canada: support@bostona.com

Europe: support@bostona.com

Japan: ba_info@dm-holdings.com

Asia/Pacific countries: service@dm-singapore.com

We will promptly advise you of what action to take.

Boston Acoustics, Inc. 300 Jubilee Drive, Peabody, MA 01960 USA

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