Sonic Immersion System



Owner's Manual and Dealer's Installation Guide



Export Sonic Immersion System

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Export Sonic Immersion System

Owner's Manual

Features of the Sonic Immersion

- Dealer installation allows you to add to any Sonic Immersion System ready Dimension One Spa in stock
- Patented planar magnetic speaker technology (1/4" [6.35 mm] thick) that generates unparalleled sound quality even in the harshest environmental conditions
- Superior fidelity and low distortion
- Articulated speaker mount that allows multidirectional capability and if the speakers are struck by an object, speakers deflect without being damaged
- Remote operation

Using the CD Player

The manufacturer of the Sonic Immersion System CD Player has supplied a User Guide for the CD player. Please refer to this guide for instructions on how on use of the CD player.

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Dealer Installation



This section intended for use by authorized dealer personnel only

Getting Ready To Start

The Sonic Immersion System can only be installed on spas with the following serial numbers.

Table I Sonic Immersion System Ready Spas

Model	Serial Number
Aurora HP	91275 or higher
Aurora II	91210 and higher (Also 91184)
Aurora XLT	91295 and higher
Caliente HP	91301 and higher (Also 91290 and 91299)
Californian	91198 and higher
Chairman	91245 and higher
Chairman II	91234 and higher
Diplomat	91197 and higher
Nautilus	91458 and higher (Also 91455)
Triad	91372
Triad II	91625 an higher (Also 91567)

Overview of the Installation

The installation of the **Sonic Immersion System** is a simple process that includes removing the spa skirt, drilling a few holes using the templates provided to guide you, and then connecting one or more power cables. This guide is provided to help complete this task in a quick and efficient manner.

Required Tools

You will need the following tools to complete the installation:

Table 2 Required Tools

Electric drill

I $\frac{1}{2}$ inch (3.8 mm) hole saw

1/4 inch (6.35 mm) drill bit 3/8 inch (9.5 mm) drill bit



Saber Saw

Phillips screwdriver

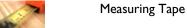


Tape (masking, electrical, duct, or packaging) ½ in (12.7 mm) width

Spring-loaded punch (or other tool(s) that can be used to mark drilling locations, such as a hammer & nail)



Fine Point Marker



Fish Tape

Fish Tape Lubricant

Non Ratcheting PVC Pipe Cutter





Medium Size Needle Nose Pliers



Wire Stripper



Utility Knife

5/16" (7.94 mm) Nut Driver or wrench

Six inch (15.24 cm) square



Stapler and Staples

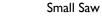


Straight Edge



Safety Glasses

Silicone caulking (clear)





Parts List

You should have received the following parts in the **Sonic Immersion System** installation kit:

Table 3 Parts List

Description	Qty	Item	
		Number	
This document		01510-	
		1030	
Amplifier	I	01564-08	
Coarse- Threaded Drywall Screws	5	01051-06	
Template	I	Doc 74- Rev A	3375
Power Supply Harness	I	01564-19	
Power, supply, stereo	I	01564-01	
Main Harness	I	01564-20	
Speaker, lead	2	01564-21	7
Speakers, Satellite	2	01564-14	SEXION STATEMENT OF THE SERVICE OF T

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Stereo	I	01564-03	
Sub-woofer sub assembly	1	01564-09	
Stereo cover, marine	I	01564-04	
Dual pole antenna	I	01564-05	
Preamp stereo, cable	2	01570-24	
Power supply screw, sheet metal, SS, PH	2	01011-38	
Marine cover screws, #8 x ½" (1.3 cm) SS Truss Head	4	01011-40	m
Cable Ty, 4" (10.2 cm) black	10	01200-006	

Cable Ty Mo	unt 10	01200-005	

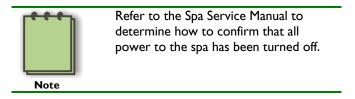
Removing Panels

In order to install the system up to three panels must be removed from the spa: the equipment compartment panel, the panel where the sub woofer is installed, and the panel where the Satellite Speakers are to be installed.

Remove Equipment Compartment Panel



- Turn off the main spa circuit breaker located in the disconnect box or house panel.
- Verify that all power has been turned off before continuing installation.



3. Locate the spa's Main Top Side Control, Figure 1.



Figure I. Top Side Control

- 4. The Lower Control is located in the equipment compartment behind the spa panel below the Main Top Side Control.
- 5. Use the screwdriver to remove the equipment compartment panel screws, Figure 2.



Figure 2. Equipment Compartment Panel Screws



The number of screws to be removed will depend of the model of spa.

Remove the Sub Woofer Compartment Panel

The installation location of the sub woofer compartment will vary from one spa model to another. Use Table 4 to locate the compartment on your spa. First, stand in front of the spa facing the Top Side Control (at the 6 o'clock position, see below) and then refer to Table 4 below.

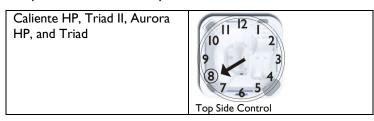
Sub-Woofer Installation Locator



Top Side Control

Table 4 Model List

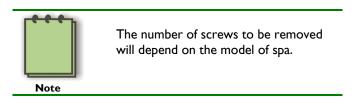
Model and Number	Location of Installation
Aurora II and Chairman	11 12 1 2 2 9 3 8 7 6 5 Top Side Control
Chairman II and Aurora XLT	10 12 1 9 3 8 7 6 5 Top Side Control
Diplomat, Californian	10
Nautilus	10 12 12 12 19 3 8 7 6 5 Top Side Control



1. Use the screwdriver to remove the spa panel screws, Figure 3.



Figure 3. Equipment Compartment Panel Screws



Installing the Sub Woofer Compartment

The installation of the sub woofer compartment consists of removing the panel, removing the paper cover, exposing the plug, removing the plug, and installing the sub woofer compartment.

 If you have a spa with wood siding you may skip to Step 2. If your spa has EnviroTectTM siding you will need to remove the white foam sheeting, Figure 4.



Figure 4. Removing EnviroTect™ Sheeting

Using a locking utility knife set for a depth of about ½ inch, cut a 13" X 18.5" (33 cm X 47 cm) rectangle as shown in Figure 5. Remove the paper and foam until you expose the sub woofer plug. You may need to use a screwdriver or other tool to remove the paper and foam.

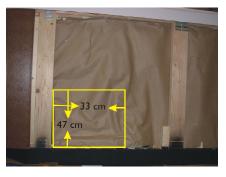


Figure 5. Cutting Rectangle



The photograph Figure 5 may not look like your spa, refer to Table 4.



Sub-Woofer Plug

Figure 6. Sub-Woofer Plug

3. Once the plug is exposed, Figure 6, use a screwdriver to punch holes in the foam large enough to insert your hands and pull the plug out of the spa, Figure 7.



The plug may not come out in one piece.

Note



Figure 7. Removing Plug

- 4. Use a medium size pair of needle nose pliers to remove the large staples in the bottom rail where the plug was removed.
- 5. Remove all remnants of the plastic bag inside the compartment where the plug was removed. This will expose the electrical conduit, Figure 8.



The electrical conduit may not always be in this location. It will vary from spa to spa.

Note



I. Electrical Conduit Before Trimming

Figure 8. Electrical Conduit

6. Using a non-ratcheting PVC pipe cutter, trim the electrical conduit flush with the foam wall, Figure 9.



I. Electrical Conduit After Trimming

Figure 9. Conduit After Trimming

7. Locate the sub woofer sub assembly (P/N 01564-09). Locate the spot on the compartment that matches the location of the conduit in the spa. Using a 1½ inch (3.8 cm) hole saw, drill a hole for the conduit, Figure 10.



Figure 10. Drilling Hole for Cables

8. Try to place the sub woofer compartment into the space where the plug was removed. It must fit flush with the bottom edge of the frame, Figure 11. In order to accomplish this it may be necessary to remove additional foam.



I. Bottom Edge of Frame

Figure II. Edge of Frame

9. A properly positioned sub woofer compartment is shown in Figure 12.



Figure 12. Properly Installed Sub-Woofer

Once you are satisfied that the compartment fits properly, secure the compartment to the frame, Figure 13, with 5 1" (2.54 cm) coarse-threaded drywall screws (P/N 01051-06 provided in hardware package).



Figure 13. Attaching to Frame

Pre Wiring from Equipment Compartment to Sub Woofer Compartment

I. Feed the fish tape through the conduit from the sub-woofer compartment to the equipment compartment, Figure 14.



I. Fish Tape

Figure 14. Fish Tape in Equipment Compartment

- Now locate the amplifier cables (two white and two red RCA connectors on both ends, P/N 01570-24). Locate the three-branched harness assembly (P/N 01564-20). One branch will be considerably longer than the other two.
- 3. Attach the preamp stereo cables (01570-24) and long branch of main harness (01564-20) to fish tape using electrical tape, Figure 15.



Figure 15. Attaching Cables and Harness to Fish Tape

4. Apply a small amount of fish tape lubricant to a cloth and then run the cables through the rag to give them a light coating of lubricant, Figure 16.



Figure 16. Applying Lubricant to Cables

5. Now pull them through the conduit from the equipment compartment to the sub-woofer compartment, Figure 17.



Figure 17. Cables in Sub-Woofer

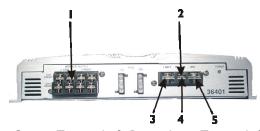
6. Now that the harness and cables have been fished through the conduit from the equipment compartment to the sub-

woofer compartment, the wires and cables can be connected to the amplifier in the sub-woofer compartment. You may want to trim off some of the harness because it could be longer than necessary. Make sure that when the wires are connected to the amplifier that the amplifier can be moved out to make adjustments. Using a wire stripper, strip approximately $\frac{1}{2}$ inch (1.27 cm) of insulator from the 3 conductor wires, Figure 18.



Figure 18. Stripping Wires

Connect the black wire to the terminal marked GND.
 Connect the red wire to the terminal marked "+ BATT", and connect the blue wire to the terminal marked "REMOTE", Figure 19.



I. Speaker Output Terminals. 2. Power Input Terminals 3. Red Wire 4. Blue Wire 5. Black Wire

Figure 19. Connecting Wires for Power Input

8. Locate the wire coming from the sub-woofer. This wire is covered with clear insulator. The wire has two conductors. One is copper-colored and the other is silver. Strip approximately ½ inch (1.27 cm) of insulator from each wire and twist each to form a tight bundle. Connect the copper colored wire to the terminal marked" CH2 (REAR) + LEFT". Connect the silver colored wire to the terminal marked" CH2 (REAR) – RIGHT", Figure 20.

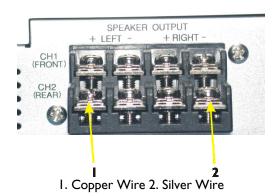
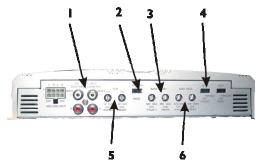


Figure 20. Connecting Wires to Speaker Output

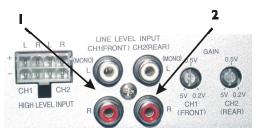
9. Connect red and white preamp input wires to the Line Level Input terminals as follows: connect Channel I (flat speaker)

to red and white terminals on left, connect Channel 2 (sub-woofer speaker) to red and white terminals on right, Figures 21 and 22.



I. Line Level Input 2. Mode Control 3. Bass Boost Control 4. HP/LP Crossover Control 5. Gain Controls 6. High Pass Controls

Figure 21. Terminals and Controls



 Channel I (used for Satellite Speakers) 2. Channel 2 (used for Sub Woofer Speakers

Figure 22. Connecting Wires to Channel I and 2

- 10. Set GAIN CH I and CH 2 to 0.5V position, Figure 23.
- II. Set MODE to the 3ch position.



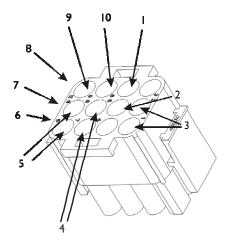
Figure 23. Setting Controls

- 12. Set BASS BOOST CHI and CH 2 to the MIN position.
- 13. Set HIGH PASS CH I and CH 2 to the 200 HZ positions.
- 14. Set CH I to HP position and CH 2 to LP position.

Installation of Power Supply

Pre-Wire Power Supply

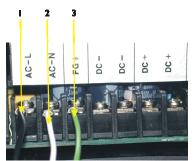
Locate the power supply kit that contains the power supply (P/N 01564-0) and a 12-pin connector (P/N 01564-19) containing wires in the following configuration, see Figure 24.



 Green 2. Yellow 3. Red 4. Blue 5. Black 6. Row 3
 Amplifier 7. Row 2 Stereo 8. Row 1 120 V Supply 9. Black 10. White

Figure 24. Connector Wire Configuration

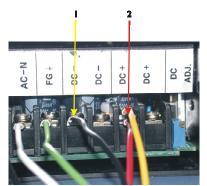
I. Connect the wires from Row I (I20 V Supply) to the power supply as follows: black wire to the terminal marked "AC-L", the white wire to terminal marked "AC-N", and the green wire to the terminal marked "FG", Figure 25.



I. Black Wire 2. White Wire 3. Green Wire

Figure 25. Connecting Wires to 120 Volt Supply on Power Supply

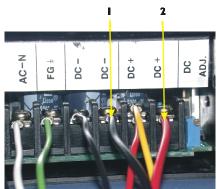
Connect the wires coming from Row 2 (Stereo +12 V Supply) as follows: (Figure 26) yellow and red wires to terminal marked "DC+" and the black wire to terminal marked "DC-".



1. Black Wire 2. Red and Yellow Wires

Figure 26. Connecting Wires to Stereo and 12 V Supply Terminals on Power Supply

3. Connect the wires coming from Row 3 (Amplifier) as follows (see Figure 27): red wire to unused terminal marked "DC+" and black wire to unused terminal marked "DC-".

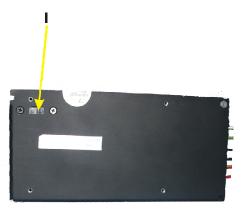


I. Black Wire 2. Red Wire

Figure 27. Connecting Wire to Amplifier Terminals on Power Supply

Installing Power Supply in Equipment Compartment

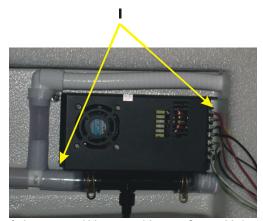
 Turn the power supply so that you can see the Voltage Selector Switch, see Figure 28, and place the switch in the correct position (115V for UL and CSA spas or 240V for CE spas) for your location.



1.Voltage Switch

Figure 28. Voltage Switch on Back of Power Supply

2. Locate two #8 x ½" (1.27 cm) Pan head screws (P/N 01011-38) in the power supply kit. The power supply has two holes for attaching it to the wall of the equipment compartment, Figure 29. Locate the hole in the upper right corner of the power supply. Use electric screwdriver to secure the power supply. Now use the remaining screw to secure the left bottom corner of the power supply.



I. Location of Upper and Lower Screw Holes

Figure 29. Location of Attachment Holes on Power Supply

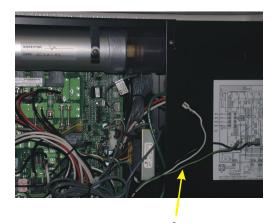
3. Locate the connector on the harness assembly that matches the one that you just installed on the power supply and connect them together, Figure 30.



Figure 30. Connecting Harness to Power Supply

Wiring the Power Supply

 Locate the end of the harness that has a green, black, and white wire (with connectors). Remove lower control box cover. Insert these wires through the hole in the bottom of the lower control box, Figure 31.



I. Wires Inserted through Hole in Bottom of Lower Control
Box

Figure 31. Inserting Wires in Lower Control Box

2. Using a 5/16" (7.9 mm) nut driver or wrench remove the 5/16" (7.9 mm) nut that secures the ground wires to the bottom lower control box, see Figure 32.

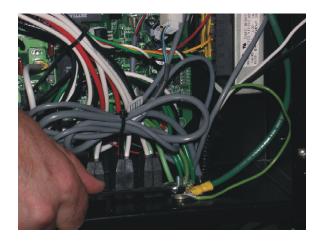


Figure 32. Removing Nut from Ground Terminal

- 3. Now place the green ground wire that you just inserted into the lower control box over the screw, replace 5/16" (7.9 mm) nut, and secure with 5/16"(7.9 mm) nut driver or wrench.
- 4. Connect the white and black wires to the pins as outlined in Table 5.

Table 5 Pin Connectors

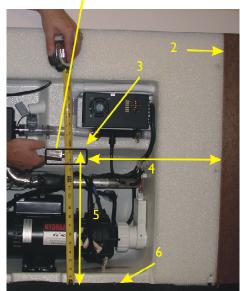
В	oard Description	Pin Connections
	MSPA-1-CE (240	Green – ground
	V, 50Hz)	White – P-98
	International	Black – P-44
	MSPA-MP-CE (240	Green – ground
	V, 50 Hz)	White – P-80
	International	Black –P-39

Determining Location of CD Weather Cover

The installation location of the CD Player Weather Cover (P/N 01564-04) depends on the model of the spa. The following steps will guide you through the process of determining the installation location.

I. Refer to Figure 33. Measure distances A and B.





 Detail of Stereo Recess Area 2. Corner Panel 3. Stereo Recess 4. Distance B (Horizontal Position) 5. Distance A (Vertical Position) 6. Top of Spa Base

Figure 33. Determining Location of CD Weather Cover

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It is important that the ruler or square (see picture on previous page) be kept level and at the top of the recess area while making these measurements.

Note

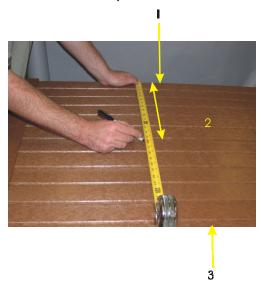
2. Use the measurements determined in Step I and insert them into the following formula:

Distance A = Distance B =	
A + 1" (2.54 cm) = Vertical Position (VP)	
B + $\frac{3}{4}$ " (1.91 cm) = Horizontal Position (HP)	

3. Now proceed to Cutting Panel Hole for CD Player

Cutting Panel Hole for CD Player Door Assembly

 Using number obtained for the Vertical Position (VP), measure up from bottom of panel, see Figure 34, and mark spot with a fine point marker.



I. Bottom of Panel 2. Panel Lay Face Up 3. Top of Panel

Figure 34. Measuring Vertical Distance

2. Using measurement obtained for Horizontal Position (HP), measure from side of panel, see Figure 35, and mark spot with a fine point marker.



Figure 35. Measuring Horizontal Distance

- 3. The point where these two lines intersect is the **upper right** corner of the template (P/N Doc 74 Rev A).
- 4. Align the upper right corner of the template with the mark on the panel. Use a center punch to mark the spot, Figure 36.

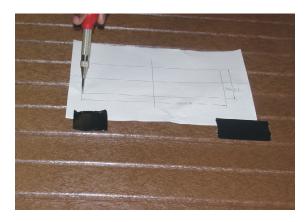


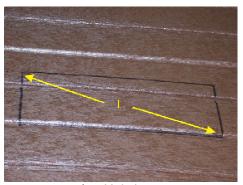
Figure 36. Aligning Template

- 5. Square up the template on the panel and use the center punch to mark the other three corners.
- 6. Using a machinist's square or straight edge, connect all four marks, Figure 37.



Figure 37. Connecting Marks

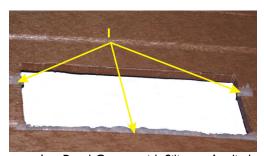
7. Using a 3/8" (9.5 mm) bit, drill holes in two corners of the rectangle, Figure 38. Make certain that the holes are within the lines. Using a center punch to mark the drilling centers will prevent the drill bit from wandering.



I. Hole Locations

Figure 38. Hole Locations

- 8. Using a saber saw, cut out the rectangular piece from the panel.
- Depending on where the hole in the panel is located you may need to use some Silicone caulking in the panel grooves to prevent moisture from entering the CD player, see Figure 39.

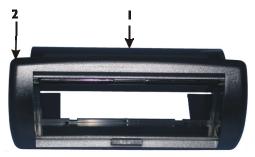


I. Panel Cutout with Silicone Applied

Figure 39. Panel Cutout

Installation of CD Player Door and Bezel

If the bezel is not removed from the door assembly (P/N 01564-04), remove it by pulling from the bottom of the bezel and then proceed as follows, see Figure 40:



I. Door Assembly 2. Bezel

Figure 40. Bezel and Door Assembly

- 2. Place the door assembly in the cutout. Make certain the door will open and close freely. Door should open from bottom.
- 3. Locate $4 \# 8 \times 1$ " (2.54 cm) SS Truss Head screws (P/N 01011-40) provided with kit. Using an electric screwdriver attach the door assembly to the panel, Figure 41.

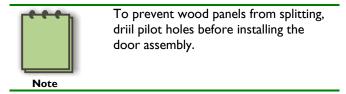




Figure 41. Door Assembly Installed

- 4. Reattach the bezel.
- Locate the mounting sleeve supplied with the CD player and refer to the CD Player Owner's manual for directions on how to install this sleeve. Once the CD player mounting sleeve is installed in the panel, proceed to the following paragraph.

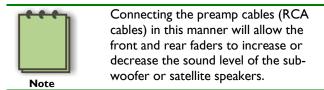
Installation of Panel and CD Player

- I. Place the Dual Pole Antenna (P/N 01564-05) in the equipment compartment.
- 2. Place the panel up against spa so that you can pull the main harness, antenna, and amplifier cables through the door assembly, Figure 42.



Figure 42. Door Assembly Ready for CD Player Connection

- 3. Reattach panel to spa.
- 4. Connect antenna, main harness and amplifier to CD player as described in CD player owner's manual. Connect power supply cable (long branch of main harness) to power supply connector on CD player. Connect Channel I preamp stereo cables (RCA cable) to FRONT connectors on the CD player and the Channel 2 cables to the REAR connectors on the CD player.



5. Then slide CD player into sleeve and lock in position.

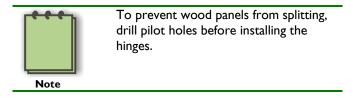
Installing the Satellite Speakers

Locate the panel where you will install the speakers, Figure 43.



Figure 43. Typical Satellite Speaker Installation

- Take the hinge mounting bracket connected to the speaker (P/N 01564-14) and place it on the panel with the top triangular portion of the hinge butting up against the lower edge of the overhanging spa lip.
- 2. Remove the protective caps from the hinge screw holes and using a center punch mark the locations for the screws.
- Locate the four mounting screws that come with the hinges.
 Using an electric screwdriver, attach the hinges to the spa panel.



4. Replace the protective caps over the hinge screw, Figure 44.



I. Caps in Place

Figure 44. Protective Caps in Place

Installing the Satellite Speaker Wires

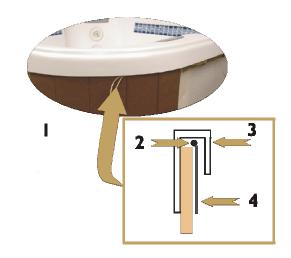
- Remove the panel where you just finished installing the speakers.
- 2. Locate two speaker wire sets (P/N 01564-21). The wires have clear insulator with a silver and copper wire and female connectors on one end.
- 3. Using a Cable Tyes and Cable Mounts (P/N 01200-006 and 01200-005), attach the wires to the frame in the approximate location of the speakers directly below the edge of the spa, see Figure 45, until you come to the corner panel.



I. Speaker Wires Attached with Cable Tyes and Mounts

Figure 45. Speaker Wires Attached

4. When you get to the corner panel use a thin, blunt object to force the wires up under the overhanging lip of the spa and the panel, Figure 46.

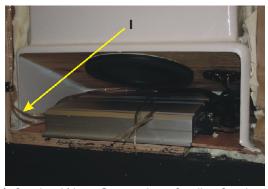




When pushed all the way up under the lip, the wire or cable will rest safely on the lip of the spa wall 2. Cable or Wire . 3.
 Spa Shell's Lip 4. Wooden Ruler or Paint Stir Stick 5. Install Wire or Cable Under the Spa Shell's Lip

Figure 46. Installing Speaker Wires

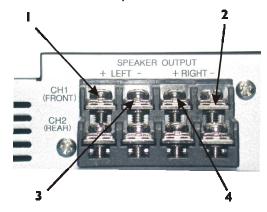
5. Continue installing the wire until you reach the panel where the sub-woofer compartment has been installed. Now use the Cable Tyes and Cable Mounts to attach the wire to the wood until you reach the sub woofer compartment, Figure 47.



I. Speaker Wires Coming from Satellite Speakers

Figure 47. Satellite Speaker Wires in Sub-Woofer Compartment

- 6. Trim any excess wire leaving enough to connect the amplifier and approximately 12 inches (30.5 cm) of slack. Then strip approximately ½ " (12.7 mm) of insulator from each wire.
- 7. Connect the wires to amplifier as shown in Figure 48.



I. Copper Wire 2. Copper Wire 3. Silver Wire 4. Silver Wire

Figure 48. Connecting Satellite Speaker Wires to Amplifier

8. Now connect the wires coming from the sub-woofer compartment to the satellite speakers. The wires from the speakers have male connectors and the wires coming from the sub-woofer have female connectors, Figure 49.

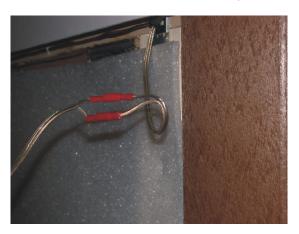


Figure 49. Speaker Wires to Satellite Speakers

9. Place the panel back on the spa and secure with screws. The finished installation should appear as in the pictures shown in Figure 50.



Figure 50. Completed Speaker Installation

Securing the Amplifier

Now that the speakers have been installed and the amplifier has been adjusted it can be secured to the frame, Figure 51, with dry wall screws supplied in the kit (P/N 01051-06).



Figure 51. Securing Amplifier to the Frame

Complete the Installation

Replace the spa panels to complete the installation.

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