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ES

X-A90M

MONO POWER AMPLIFIER

X-A70F

4 CHANNEL POWER AMPLIFIER

X-A90V

4 CHANNEL + MONO POWER AMPLIFIER

- **OWNER'S MANUAL**
Please read before using this equipment.
- **MANUAL DE OPERACIÓN**
Léalo antes de utilizar este equipo.
- **MODE D'EMPLOI**
Veuillez lire avant d'utiliser cet appareil.

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CONTENTS

WARNING.....	1
SERVICE CARE	2
ACCESSORIES	2
INSTALLATION.....	3
REMOVING THE TOP COVER.....	3
ATTACHING THE TERMINAL COVERS AND LOGO PLATE	4
CONNECTIONS	5
CONNECTION CHECK LIST	8
SWITCH SETTINGS	9
SYSTEM DIAGRAMS	12
SPECIFICATIONS.....	20

WARNING

Points to Observe for Safe Usage

Read this manual carefully before using the system components. They contain instructions on how to use this product in a safe and effective manner. Alpine cannot be responsible for problems resulting from failure to observe the instructions in this manual.



WARNING

This symbol means important instructions. Failure to heed them can result in serious injury or death.

DO NOT OPERATE ANY FUNCTION THAT TAKES YOUR ATTENTION AWAY FROM SAFELY DRIVING YOUR VEHICLE.

Any function that requires your prolonged attention should only be performed after coming to a complete stop. Always stop the vehicle in a safe location before performing these functions. Failure to do so may result in an accident.

KEEP THE VOLUME AT A LEVEL WHERE YOU CAN STILL HEAR OUTSIDE NOISES WHILE DRIVING.

Excessive volume levels that obscure sounds such as emergency vehicle sirens or road warning signals (train crossings, etc.) can be dangerous and may result in an accident. LISTENING AT LOUD VOLUME LEVELS IN A CAR MAY ALSO CAUSE HEARING DAMAGE.

DO NOT DISASSEMBLE OR ALTER.

Doing so may result in an accident, fire or electric shock.

USE THIS PRODUCT FOR MOBILE 12V APPLICATIONS.

Use for other than its designed application may result in fire, electric shock or other injury.

USE THE CORRECT AMPERE RATING WHEN REPLACING FUSES.

Failure to do so may result in fire or electric shock.

DO NOT BLOCK VENTS OR RADIATOR PANELS.

Doing so may cause heat to build up inside and may result in fire.

MAKE THE CORRECT CONNECTIONS.

Failure to make the proper connections may result in fire or product damage.

USE ONLY IN CARS WITH A 12 VOLT NEGATIVE GROUND.

(Check with your dealer if you are not sure.) Failure to do so may result in fire, etc.

BEFORE WIRING, DISCONNECT THE CABLE FROM THE NEGATIVE BATTERY TERMINAL.

Failure to do so may result in electric shock or injury due to electrical shorts.

DO NOT ALLOW CABLES TO BECOME ENTANGLED IN SURROUNDING OBJECTS.

Arrange wiring and cables in compliance with the manual to prevent obstructions when driving. Cables or wiring that obstruct or hang up on places such as the steering wheel, gear lever, brake pedals, etc. can be extremely hazardous.

DO NOT SPLICE INTO ELECTRICAL CABLES.

Never cut away cable insulation to supply power to other equipment. Doing so will exceed the current carrying capacity of the wire and result in fire or electric shock.

DO NOT DAMAGE PIPE OR WIRING WHEN DRILLING HOLES.


When drilling holes in the chassis for installation, take precautions so as not to contact, damage or obstruct pipes, fuel lines, tanks or electrical wiring. Failure to take such precautions may result in fire.

DO NOT USE BOLTS OR NUTS IN THE BRAKE OR STEERING SYSTEMS TO MAKE GROUND CONNECTIONS.

Bolts or nuts used for the brake or steering systems (or any other safety-related system), or tanks should NEVER be used for installations or ground connections. Using such parts could disable control of the vehicle and cause fire etc.

KEEP SMALL OBJECTS SUCH AS BATTERIES OUT OF THE REACH OF CHILDREN.

Swallowing them may result in serious injury. If swallowed, consult a physician immediately.

 CAUTION	This symbol means important instructions. Failure to heed them can result in injury or property damages.
--	--

HALT USE IMMEDIATELY IF A PROBLEM APPEARS.

Failure to do so may cause personal injury or damage to the product. Return it to your authorized Alpine dealer or the nearest Alpine Service Center for repairing.

HAVE THE WIRING AND INSTALLATION DONE BY EXPERTS.

The wiring and installation of this unit requires special technical skill and experience. To ensure safety, always contact the dealer where you purchased this product to have the work done.

USE SPECIFIED ACCESSORY PARTS AND INSTALL THEM SECURELY.

Be sure to use only the specified accessory parts. Use of other than designated parts may damage this unit internally or may not securely install the unit in place. This may cause parts to become loose resulting in hazards or product failure.

ARRANGE THE WIRING SO IT IS NOT CRIMPED OR PINCHED BY A SHARP METAL EDGE.

Route the cables and wiring away from moving parts (like the seat rails) or sharp or pointed edges. This will prevent crimping and damage to the wiring. If wiring passes through a hole in metal, use a rubber grommet to prevent the wire's insulation from being cut by the metal edge of the hole.

DO NOT INSTALL IN LOCATIONS WITH HIGH MOISTURE OR DUST.

Avoid installing the unit in locations with high incidence of moisture or dust. Moisture or dust that penetrates into this unit may result in product failure.

SERVICE CARE

◆ IMPORTANT NOTICE

This Amplifier has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules. This equipment generates and uses radio frequency energy, and it must be installed and used properly in accordance with the manufacturer's instructions.

SERIAL NUMBER: _____
INSTALLATION DATE: _____
INSTALLATION TECHNICIAN: _____
PLACE OF PURCHASE: _____

◆ IMPORTANT

Please record the serial number of your unit in the space provided here and keep it as a permanent record. The serial number plate is located on the rear of the unit.

◆ For European Customers

Should you have any questions about warranty, please consult your store of purchase.

◆ For Customers in other Countries

IMPORTANT NOTICE

Customers who purchase the product with which this notice is packaged, and who make this purchase in countries other than the United States of America and Canada, please contact your dealer for information regarding warranty coverage.

ACCESSORIES

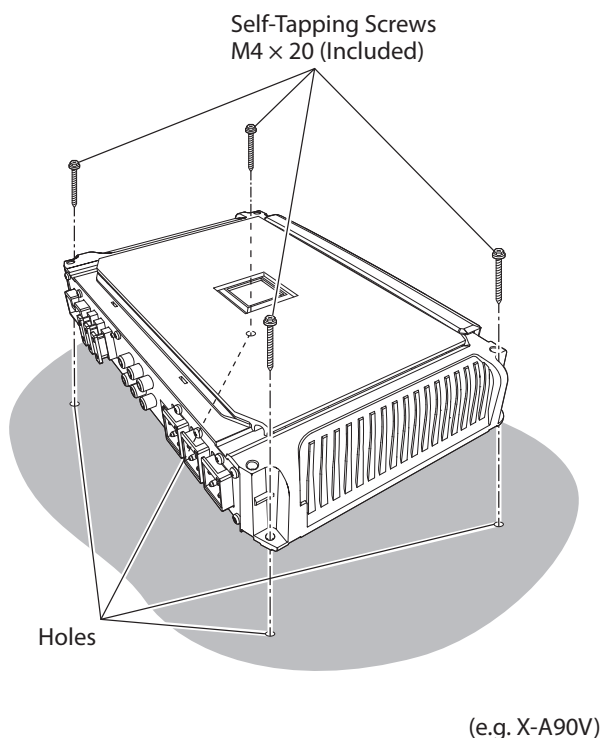
- Self-Tapping Screw (M4 × 20) 4
- Terminal Cover (F)/(L)/(R) 1 SET
- Battery Connector 1
- Speaker Connector
 - X-A90M 1
 - X-A70F 2
 - X-A90V 3
- Hexagon Wrench (Large)/(Small) 1 SET
- Logo Plate 1

INSTALLATION

Due to the high power output of the X-A90M/X-A70F/X-A90V considerable heat is produced when the amplifier is in operation. For this reason, the amplifier should be mounted in a location which will allow for free circulation of air, such as inside the trunk. For alternate installation locations, please contact your authorized Alpine dealer.

Mount the amplifier before installing the Terminal Cover (F)/(L)/(R).

1. Using the amplifier as a template, mark the four screw locations.
2. Make sure there are no objects behind the surface that may become damaged during drilling.
3. Drill the screw holes.
4. Position the X-A90M/X-A70F/X-A90V over the screw holes, and secure with four self-tapping screws.

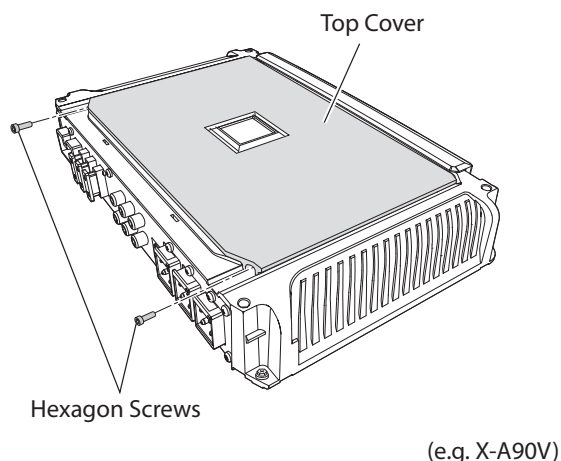


REMOVING THE TOP COVER

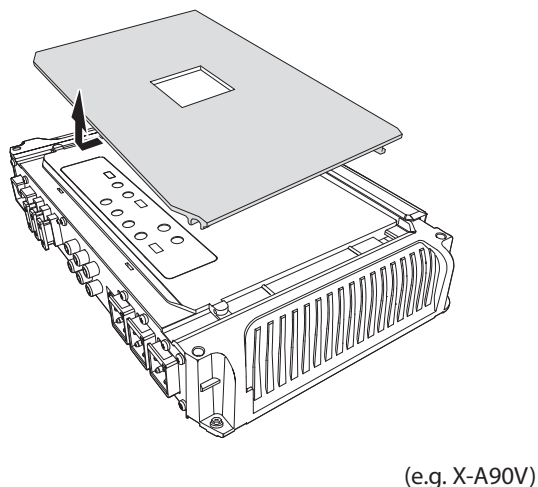
When performing the Switch Setting, you must remove the Top Cover.

- Remove the Top Cover before installing or after removing the Terminal Cover (F). For details on how to remove the Terminal Cover (F), see "ATTACHING THE TERMINAL COVERS AND LOGO PLATE" (page 4).

1. Remove the hexagon screws using the supplied Hexagon Wrench (Small).



2. Slide the Top Cover, and lift it to remove.
 - Be sure not to damage the indicator area.

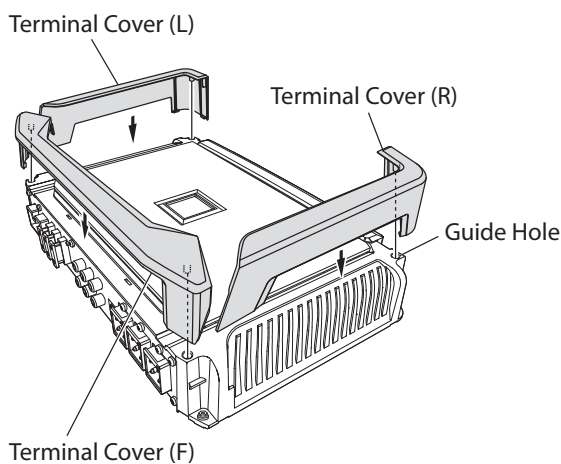


ATTACHING THE TERMINAL COVERS AND LOGO PLATE

Attach the terminal covers (included) after connections and confirmation of correct operation. Attaching the terminal covers will improve the appearance of the unit.

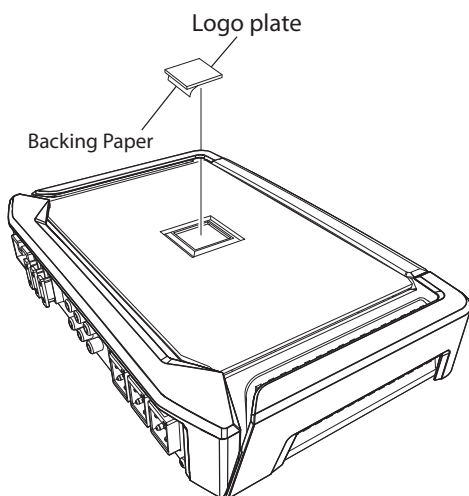
How to attach the terminal covers:

1. Attach the Terminal Cover (L)/(R) based on the guide hole of the amplifier.
2. Attach the Terminal Cover (F) based on the guide hole of the amplifier.
 - Push in until the hook is securely engaged.



(e.g. X-A90V)

3. Peel the backing paper from the Logo Plate, then attach it to this unit in your desired direction.



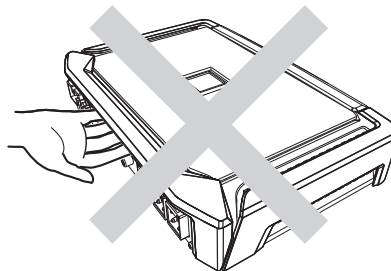
(e.g. X-A90V)



CAUTION

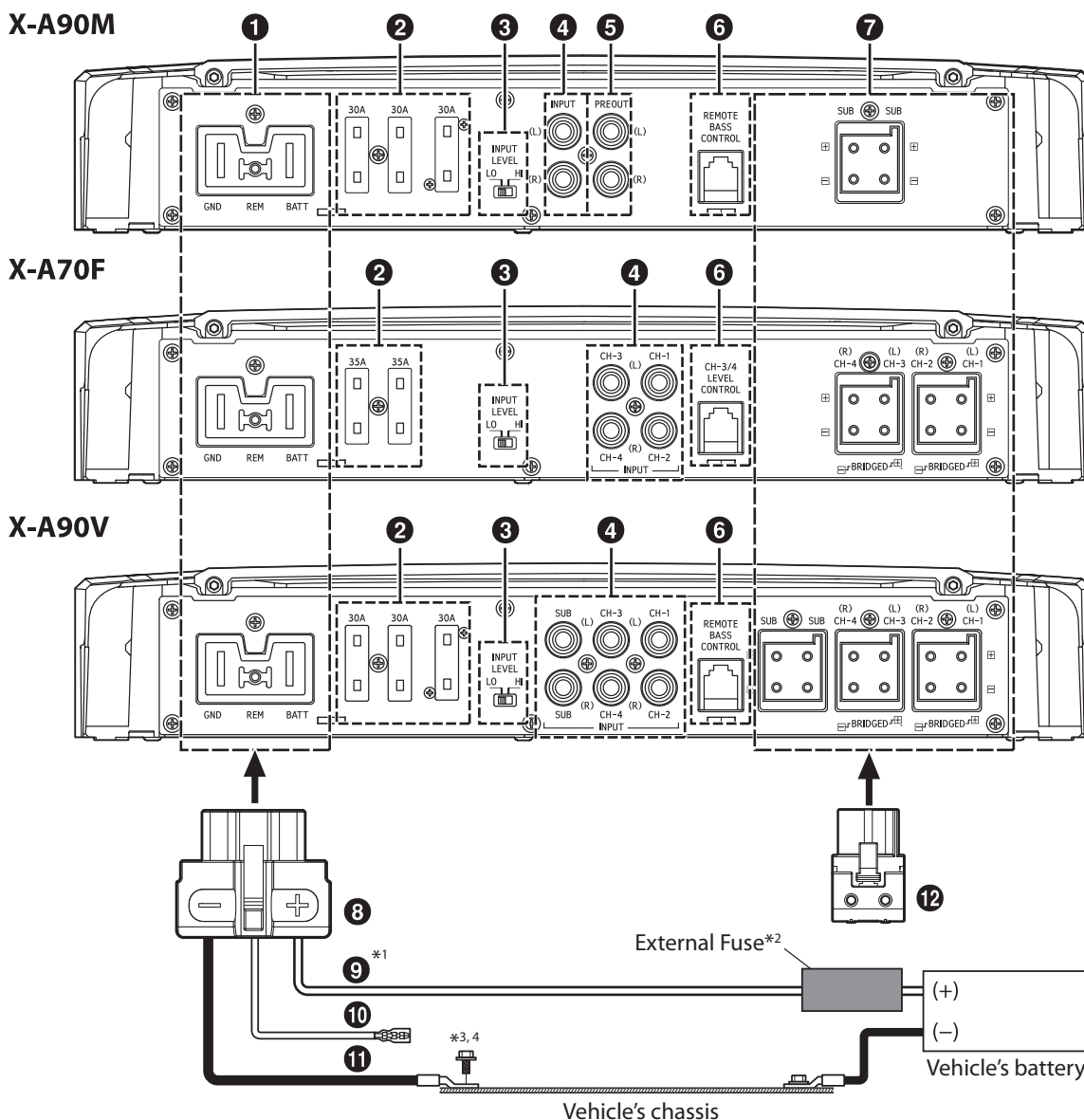
Do not lift or carry the unit by the attached terminal covers.

The terminal cover may detach causing the unit to fall resulting in personal injury or damage to the unit or the vehicle.



CONNECTIONS

Before making connections, be sure to turn the power off to all audio components.



*1 For details on the wires size to be used, refer to the supplied "Cautions on Power Supply Wires Connection" and "Cautions on Power Supply Wires" (page 19), and then use the wire of the specified size.

*2 Be sure to add an External Fuse (e.g. Fuse Block, Circuit Breaker) with the battery lead as close as possible to the battery's positive (+) terminal. Add an external fuse with the same capacity, or a slightly larger capacity, as the sum total of the fuse capacities of the amplifier.

For details on the fuse capacity of this machine, see "Battery Lead (9)" (page 6).

*3 Connect all equipment to the same ground point while keeping wire length as short as possible.

*4 To securely connect the ground lead, use an already installed screw.

To prevent external noise from entering the audio system

- Locate the unit and route the leads at least 10 cm (4") away from the vehicle's harness.
- Keep the battery power leads as far away from other leads as possible.
- Connect the ground lead securely to a bare metal spot (remove any paint or grease if necessary) of the vehicle's chassis.
- If you add an optional noise suppressor, connect it as far away from the unit as possible. Your Alpine dealer carries various noise suppressors, contact them for further information.
- Your Alpine dealer knows best about noise prevention measures so consult your dealer for further information.

1 Power Supply Terminal

2 Fuse

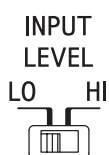
X-A90M/X-A90V	30 A x 3
X-A70F	35 A x 2

USE THE CORRECT AMPERE RATING WHEN REPLACING FUSES.

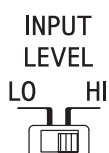
Failure to do so may result in fire or electric shock.

3 Speaker Input Level Switch

Switch according to the Speaker input mode.



- a) When making a speaker input connection with RCA Extension Cables (sold separately), set to "LO".



- b) When making a speaker input connection with Speaker-RCA Conversion Cables (sold separately), set to "HI".

4 RCA Input Jacks

Connect these jacks to the line out leads on your head unit using RCA extension cables or Speaker-RCA Conversion cable (sold separately). Be sure to observe correct channel connections; Left to Left and Right to Right.

5 Pre-Out Jacks (X-A90M only)

These jacks provide a line level output. This is an ideal output for driving a second subwoofer amp. This output is full-range, and is not affected by the crossover.

6 Remote Bass Control (Optional)

Connect the Remote Bass Control Unit RUX-KNOB or RUX-KNOB.2 (sold separately) to adjust the output level remotely. This is not to replace appropriate gain level setting between the amplifier and head unit.

- X-A70F supports RUX-KNOB.2 only.

7 Speaker Output Terminals

8 Battery Connector

Make the Battery, Remote Turn-on and Ground lead connections (as shown) to the Battery Connector.

Insert Plug to Terminal ①.

- For details on how to connect, see "Cautions on wire lead connections" (page 7).

9 Battery Lead (Sold Separately)

Be sure to add an External Fuse (e.g. Fuse Block, Circuit Breaker) with the battery lead as close as possible to the battery's positive (+) terminal. This fuse will protect your vehicle's electrical system in case of a short circuit. See below for appropriate fuse value requirement:

X-A90M/X-A90V	90 amp fuse
X-A70F	70 amp fuse

- For details on the wires size to be used, refer to the supplied "Cautions on Power Supply Wires Connection" and "Cautions on Power Supply Wires" (page 19), and then use the wire of the specified size.

10 Remote Turn-On Lead (Sold Separately)

Connect this lead to the remote turn-on (positive trigger, (+) 12 V only) lead of your head unit. If a remote turn-on lead is not available, see "CONNECTION CHECK LIST" section on page 8 for alternative method.

- When connecting the speaker output leads of the head unit to this unit with a Speaker-RCA Conversion cable (sold separately), you do not need to connect the remote turn-on lead, owing to the "REMOTE SENSING" function of this unit. However, the "REMOTE SENSING" function may not work depending on the signal source connected. In such a case, connect the remote turn-on lead to an incoming power supply cord (accessory power) in the ACC position.

11 Ground Lead (Sold Separately)

Connect this lead securely to a clean, bare metal spot on the vehicle's chassis. Verify this point to be a true ground by checking for continuity between that point and the negative (-) terminal of the vehicle's battery. Ground all your audio components to the same point on the chassis to prevent ground loops while keeping wire length as short as possible.

- For details on the wires size to be used, refer to the supplied "Cautions on Power Supply Wires Connection" and "Cautions on Power Supply Wires" (page 19), and then use the wire of the specified size.

12 Speaker Connector

Make the Speaker Output Lead (+)/(-) connections to the Speaker Connector. Insert Plug to Terminal ⑦.

- For details on how to connect, see "Cautions on wire lead connections" (page 7).

Be sure to observe correct speaker output connections and polarity in relation to the other speakers in the system. Connect the positive output to the positive speaker terminal and the negative to negative.

About Subwoofer Input/Output Terminals (X-A90M/X-A90V only)

- The input is stereo but the output is monaural.
- Reversing subwoofer polarity (swapping positive and negative connections to the subwoofer) may be desirable in some installations for optimum bass performance.

About Bridged Connections

In the bridged mode, connect the left positive to the positive terminal of the speaker and the right negative to the negative terminal of the speaker. Do not use the speaker (-) terminals as a common lead between the left and right channels.

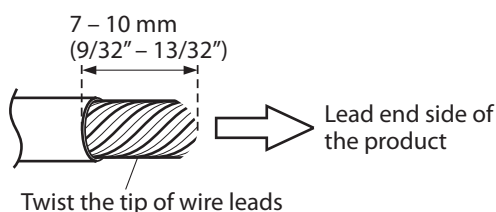
NOTE:

- Do not connect the speaker (-) terminal to the vehicle's chassis.

Cautions on wire lead connections

When using third-party wire cables (power supply wire), use the supplied screws to simplify the connection. Refer to the description below for the proper procedure. If you are in doubt about how to make this connection, consult your dealer.

1. Check the wire size.
 - For details on the wires size to be used, refer to the supplied "Cautions on Power Supply Wires Connection" and "Cautions on Power Supply Wires" (page 19), and then use the wire of the specified size.
 - If the wire gauge used is unknown, ask your dealer.
2. Remove the insulation from the ends of the wire leads by about 7 – 10 mm (9/32" – 13/32").

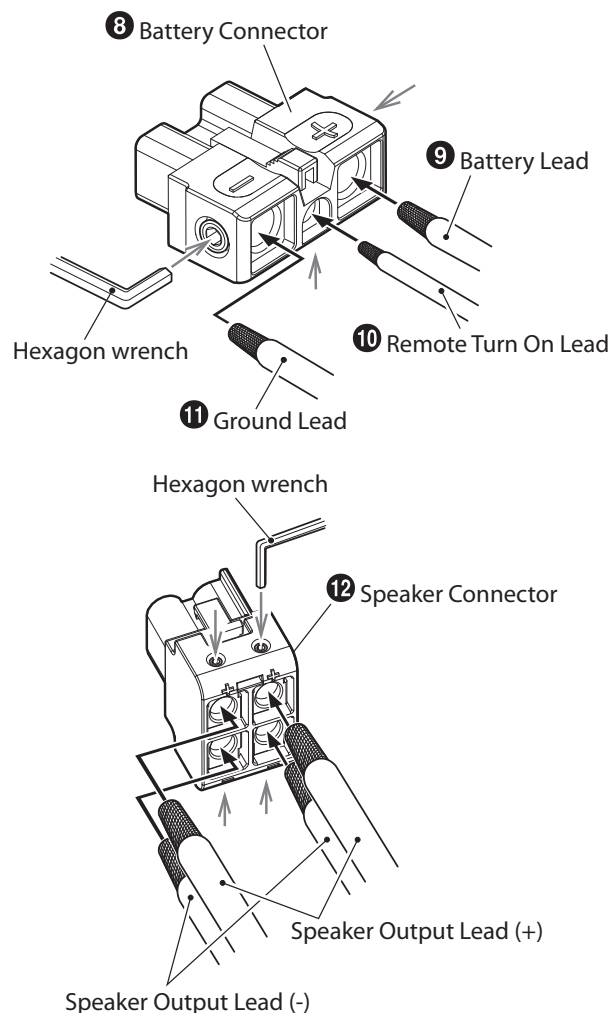


NOTES:

- If length of the exposed wire is too short, a poor connection may occur causing operation failure or sound interruption.
- On the other hand, if the length is too long, an electrical short-circuit may occur.

3. Tighten the hexagon hole screw with the hexagon wrench (Large or Small) (included) to secure the lead.

Before making this connection, use insulated shrink tubing to cover any exposed wire extending beyond the terminal.



NOTES:

- Be sure to use the Hexagon hole screw attached to the Battery Connector or Speaker Connector.
- For safety reasons, connect the battery leads last.
- To prevent disconnection of the leads or dropping of the unit, do not use the cabling to carry the unit.

CONNECTION CHECK LIST

Please check your head unit for the conditions listed below:

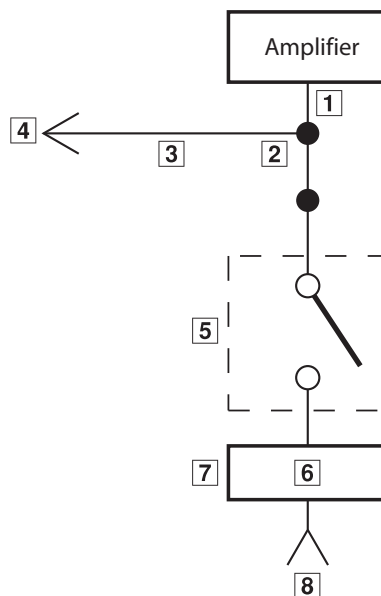
Remote Turn-On Lead

- The head unit does not have a remote turn-on or power antenna lead.
- The head unit's power antenna lead is activated only when the radio is on (turns off in the tape or CD Mode).
- The head unit's power antenna lead is logic level output (+) 5V, negative trigger (grounding type), or cannot sustain (+) 12V when connected to other equipment in addition to the vehicle's power antenna.

If any of the above conditions exist, the remote turn-on lead of your X-A90M/X-A70F/X-A90V must be connected to a switched power source (ignition) in the vehicle. Be sure to use a 3A fuse as close as possible to this ignition tap. Using this connection method, the X-A90M/X-A70F/X-A90V will turn on and stay on as long as the ignition switch is on.

If this is objectionable, a SPST (Single Pole, Single Throw) switch, in addition to the 3A fuse mentioned above, may be installed in-line on the X-A90M/X-A70F/X-A90V turn-on lead. This switch will then be used to turn on (and off) the X-A90M/X-A70F/X-A90V. Therefore, the switch should be mounted so that is accessible by the driver. Make sure the switch is turned off when the vehicle is not running. Otherwise, the amplifier will remain on and drain the battery.

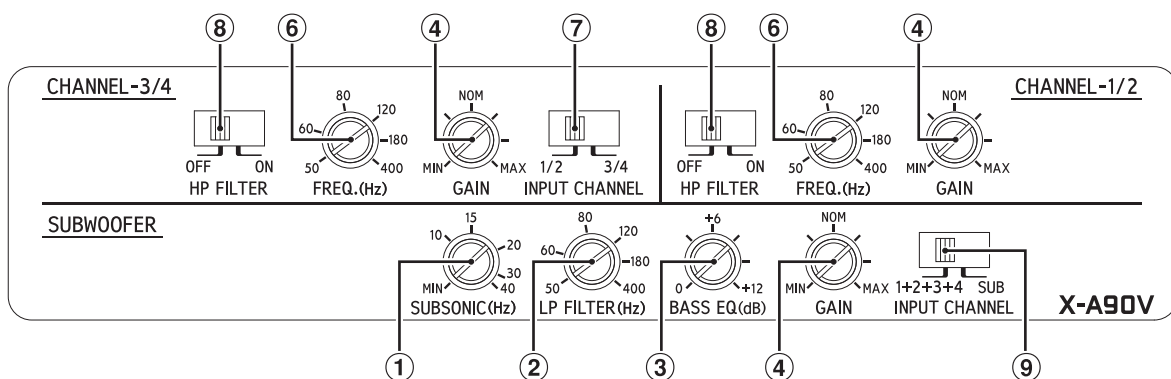
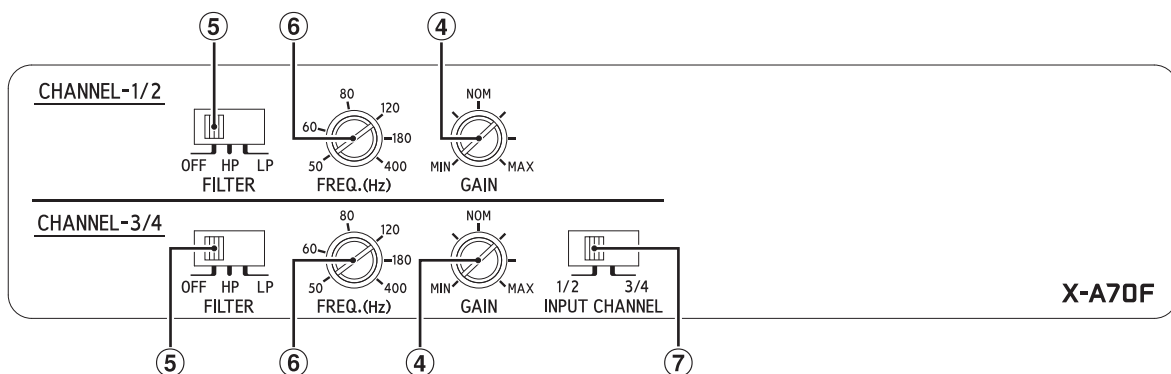
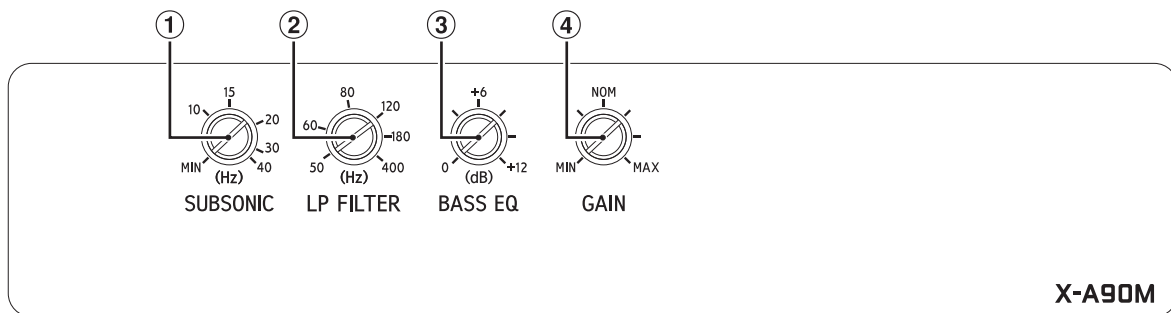
- 1 Blue/White
- 2 Power Antenna
- 3 Remote Turn-On Lead
- 4 To other Alpine component's Remote Turn-On Leads
- 5 SPST Switch (optional)
- 6 Fuse (3A)
- 7 As close as possible to the vehicle's ignition tap
- 8 Ignition Source



SWITCH SETTINGS

When performing Switch Settings, remove the Top Cover. For details, see "REMOVING THE TOP COVER" (page 3).

- Before switching each Selector Switch, turn off the power and insert a small screwdriver, etc., perpendicularly to the Switch.



① Subsonic Filter (X-A90M/X-A90V only)

The subsonic filter for cutting ultra low frequencies from the input signal before being amplified.

This is desirable for several reasons:

- To protect speakers too small or not capable of reproducing ultra low frequencies.
- To minimize power wasted from reproducing inaudible sound.
- To protect subwoofers in vented enclosures from over excursion below the tuning frequency.

② Crossover Frequency Adjustment Knob (LP FILTER) (X-A90M/X-A90V only)

Use this control to adjust the crossover frequency between 50 to 400 Hz.

③ Bass EQ Adjustment Knob (X-A90M/X-A90V only)

Add a 50 Hz bass boost up to +12 dB to tune your bass response.

④ Input Gain Adjustment Control

Set the X-A90M/X-A70F/X-A90V input gain to the minimum position. Using a dynamic CD as a source, increase the head unit volume until the output distorts. Then, reduce the volume 1 step (or until the output is no longer distorted). Now, increase the amplifier gain until the sound from the speakers becomes distorted. Reduce the gain slightly so the sound is no longer distorted to achieve the optimum gain setting.

⑤ Crossover Mode Selector Switch (X-A70F only)



- a) Set to the "OFF" position when the amplifier will be used for driving full range speakers or when using an external electronic crossover. The full frequency bandwidth will be output to the speakers with no high or low frequency attenuation.



- b) Set to the "HP" position when the amplifier is used to drive a tweeter/midrange system. The frequencies below the crossover point will be attenuated at 12 dB/octave.

NOTE:

- In this case the maximum Bass EQ boost level is reduced.



- c) Set to the "LP" position when the amplifier is used to drive a subwoofer. The frequencies above the crossover point will be attenuated at 12 dB/octave.

⑥ Crossover Frequency Adjustment Knob (X-A70F/X-A90V only)

Use this control to adjust the crossover frequency between 50 and 400 Hz.

⑦ Input Channel Selector Switch (CHANNEL-3/4) (X-A70F/X-A90V only)



- a) This switch setting is for selecting either 2-channel or 4-channel input mode. When set to "1/2", signal will be copied from CH-1/2 and sent to CH-3/4, eliminating the need for Y-adapters.



- b) Setting this switch to "3/4" will keep both inputs, CH-1/2 and CH-3/4 independent. A 4-channel source is required for this mode.

⑧ Crossover Mode Selector Switch (X-A90V only)



- a) Set to the "OFF" position when the amplifier will be used for driving full range speakers or when using an external electronic crossover. The full frequency bandwidth will be output to the speakers with no high or low frequency attenuation.



- b) Set to the "ON" position when the amplifier is used to drive a tweeter/midrange system. The frequencies below the crossover point will be attenuated at 12 dB/octave.

NOTE:

- In this case the maximum Bass EQ boost level is reduced.

⑨ Input Channel Selector Switch (SUBWOOFER) (X-A90V only)

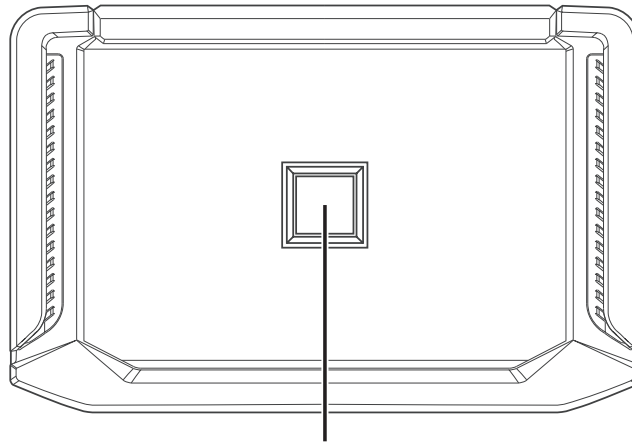


- a) When this switch is placed in the "1+2+3+4" position, all the signals are mixed and come out from the subwoofer. This setting provides signal to the subwoofer channel when only 4 channel input is available.



- b) Setting this switch to "SUB" will send the signal at the inputs of SUB to subwoofer of the X-A90V.

About Power Indicator



Power Indicator

Lights up when power is on.
Is off when power is off.

Indication color	Status	Solution
Blue	Amplifier circuit is normal.	
Red (blinking)	Operating temperature is high.	Decrease the vehicle's interior temperature to a normal level. The indicator color changes to blue.
Red	Amplifier circuit is abnormal. An electrical short has occurred, or supply current is too high.	Turn off the power supply and eliminate the cause. Then turn on the unit and verify that the indicator color has changed to blue. If it remains red, turn off the unit and consult your dealer.
	Operating temperature is too high.	Decrease the vehicle's interior temperature to a normal level. The indicator color changes to blue.
	Power supply voltage is too high.	Use the correct power supply voltage. The indicator color changes to blue.

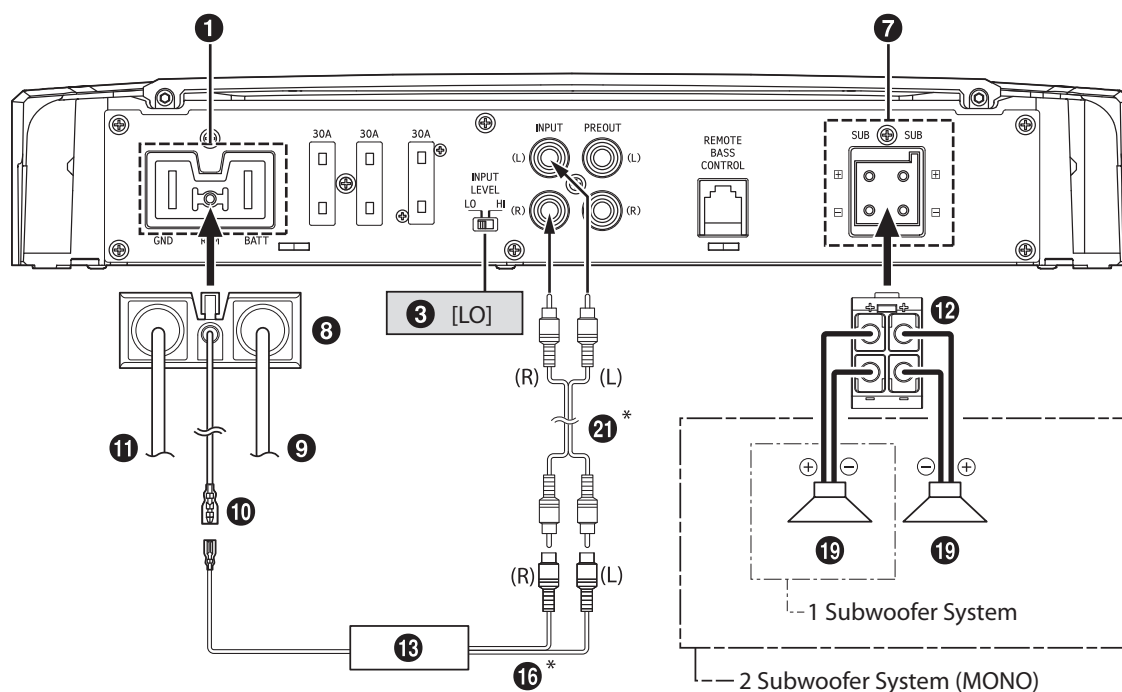
SYSTEM DIAGRAMS

Before making a connection, check the total number of impedance of the speaker connected to the unit. If you have any questions, contact the nearest Alpine dealer.

Basic Connection Diagram for X-A90M

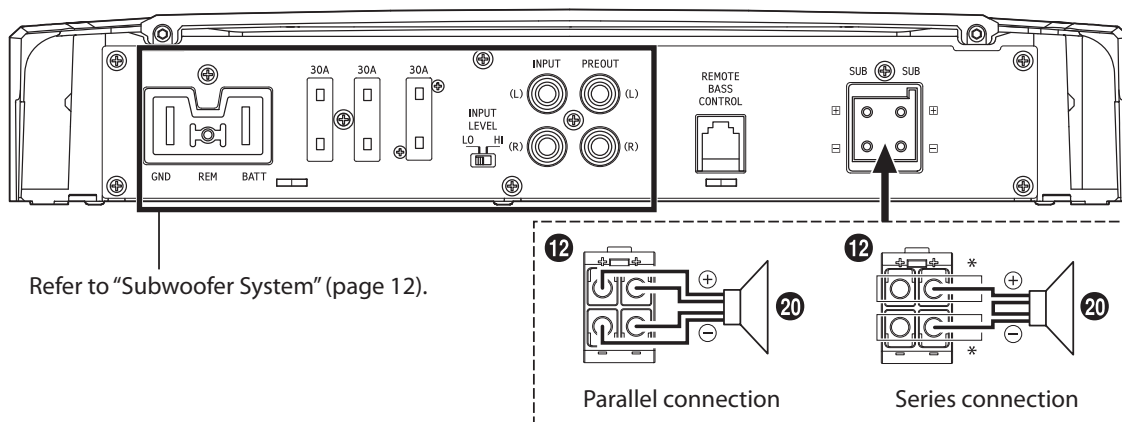
- | | |
|---------------------|---|
| 13 Head Unit, etc. | 19 Subwoofer |
| 14 Front Output | 20 Dual Voice Coil Subwoofer |
| 15 Rear Output | 21 RCA Extension Cable (Sold Separately) |
| 16 Subwoofer Output | 22 Speaker-RCA Conversion Cable (Sold Separately) |
| 17 Front Speakers | 23 Y-Adapter (Sold Separately) |
| 18 Rear Speaker | |

Subwoofer System



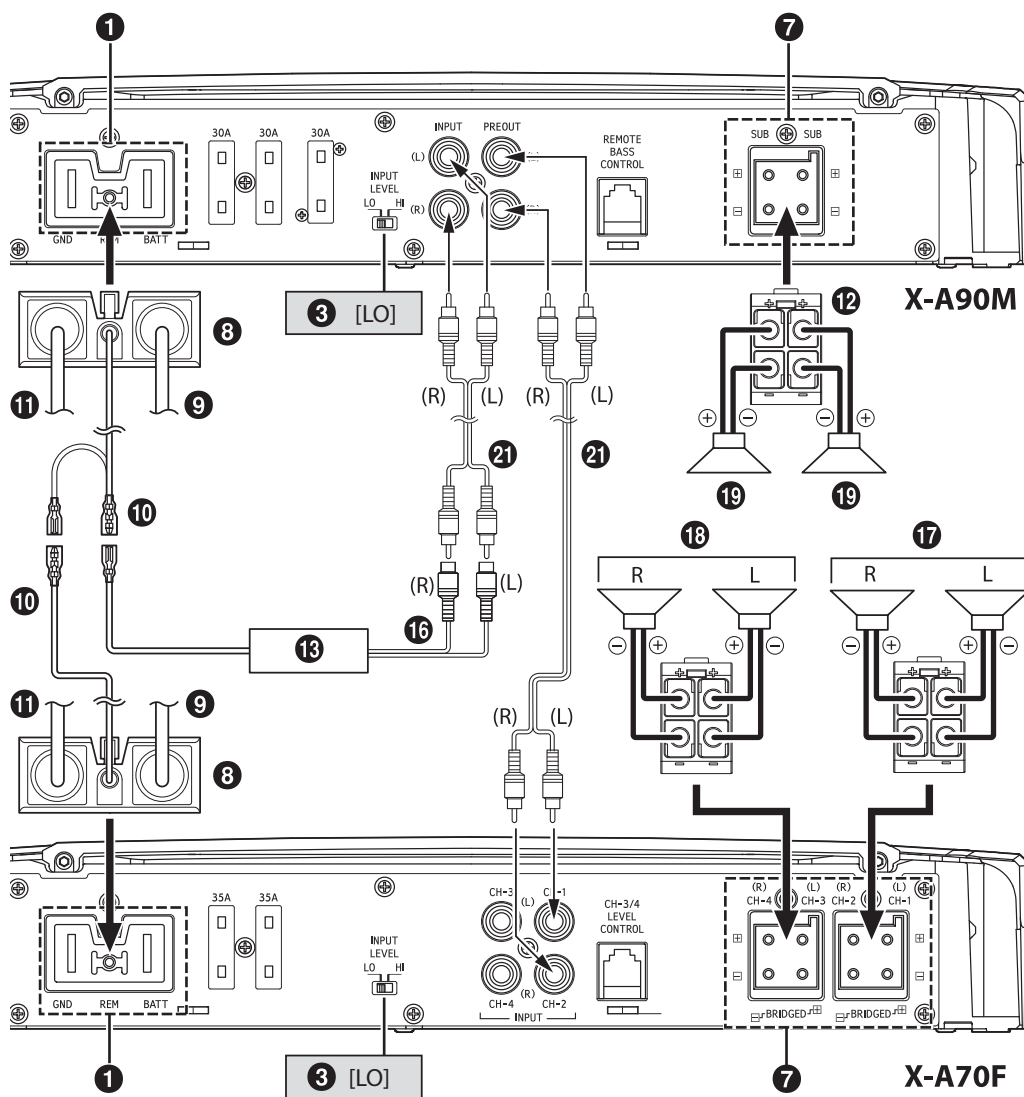
* If the connected head unit does not have a Speaker Output and RCA Extension Cables (21) cannot be used, you can use the Speaker-RCA Conversion Cable (22) (sold separately). For details on how to make a connection, see "About Connection to the Speaker Input Level System" (page 18).

Dual Voice Coil Subwoofer System



* In the case of using a series connection, the lead wire of the Dual Voice Coil Subwoofer (20) can be connected to either the (+)/(-) terminal of the Speaker Connector (12).

Multiple Mono Amplifier System (Connection example with X-A70F)


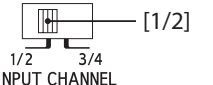


- For details on the Input Channel Selector Switch (7) of X-A70F, see "Basic Connection Diagram for X-A70F" (page 14).

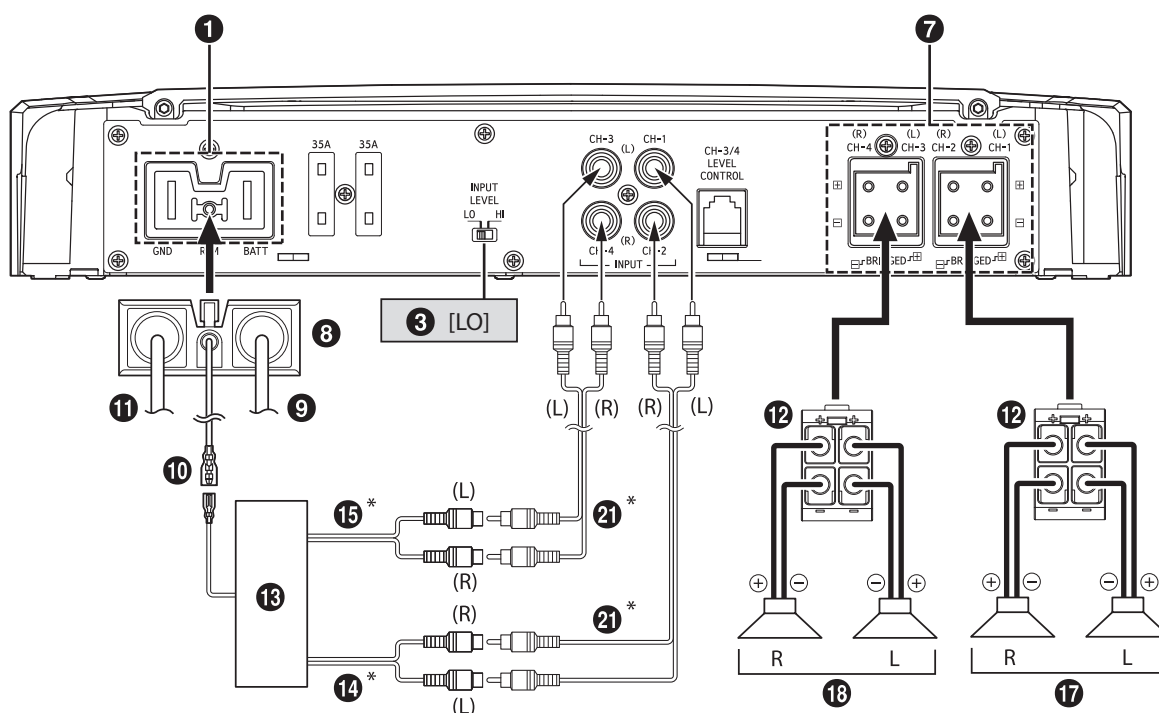
Basic Connection Diagram for X-A70F

- | | |
|--------------------|--|
| ⑬ Head Unit, etc. | ⑲ Subwoofer |
| ⑭ Front Output | ⑳ Dual Voice Coil Subwoofer |
| ⑮ Rear Output | ㉑ RCA Extension Cable (Sold Separately) |
| ⑯ Subwoofer Output | ㉒ Speaker-RCA Conversion Cable (Sold Separately) |
| ⑰ Front Speakers | ㉓ Y-Adapter (Sold Separately) |
| ⑱ Rear Speaker | |

For X-A70F, change the Input Channel Selector Switch (⑦) setting according to the number of channels of the speaker input.

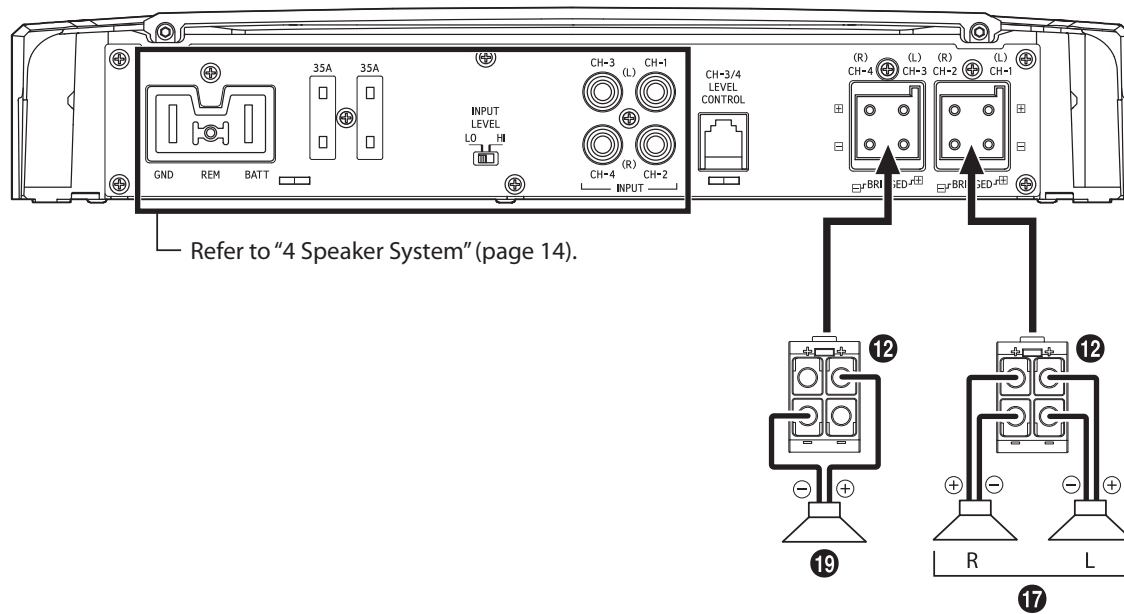
	4-Channel Input: ⑭ ⑮	2-Channel Input: ⑭
⑦	 1/2 3/4 INPUT CHANNEL	 1/2 3/4 INPUT CHANNEL

4 Speaker System

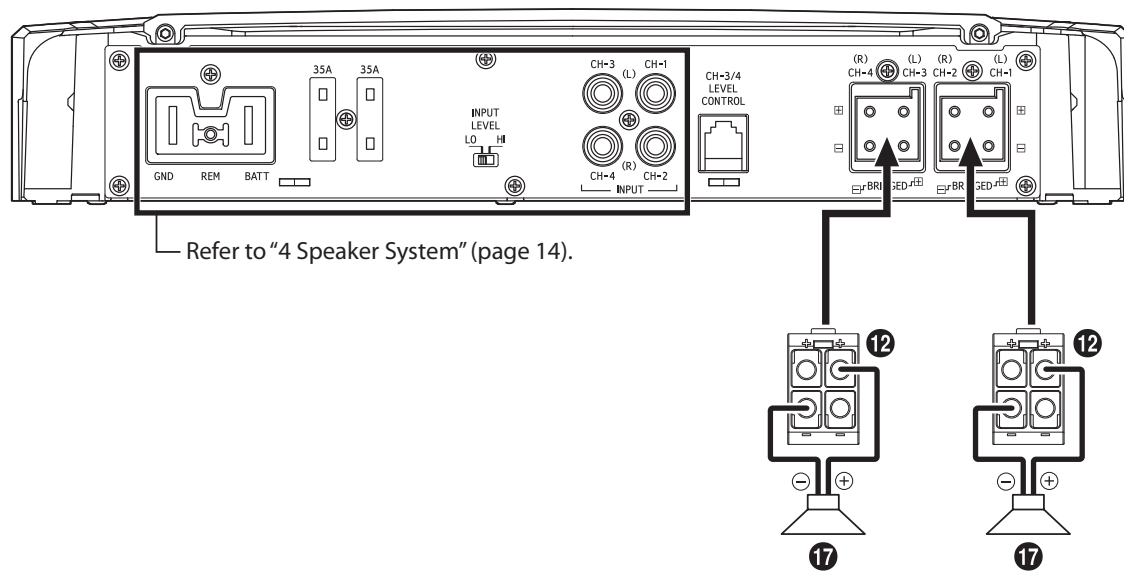


* If the connected head unit does not have a Speaker Output and RCA Extension Cables (㉑) cannot be used, you can use the Speaker-RCA Conversion Cable (㉒) (sold separately). For details on how to make a connection, see "About Connection to the Speaker Input Level System" (page 18).

2 Speaker + 1 Subwoofer System (Bridged Connections)



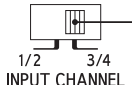
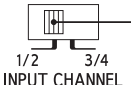
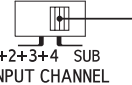
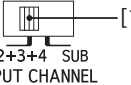
2 Speaker System (Bridged Connections)



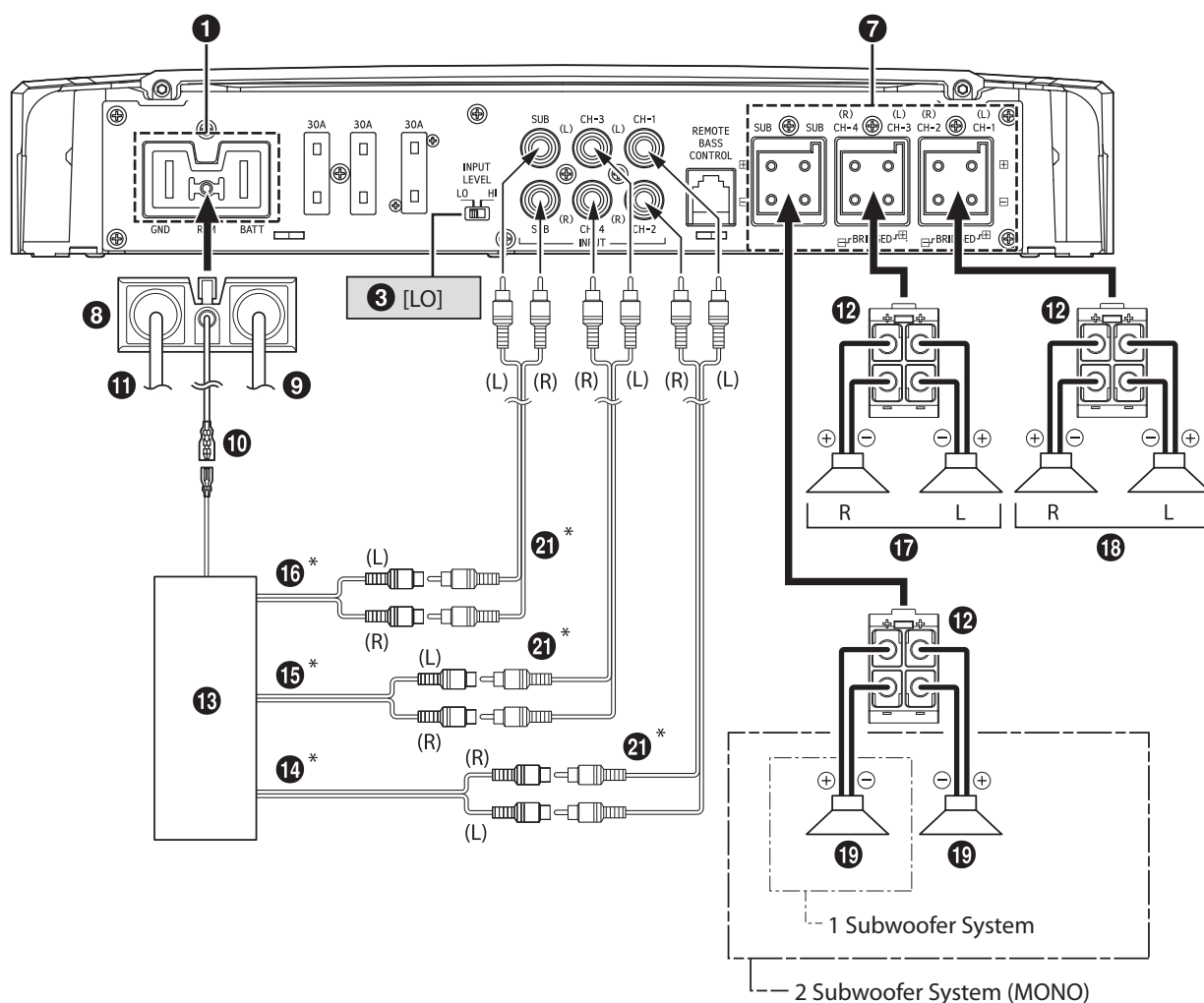
Basic Connection Diagram for X-A90V

- | | |
|---------------------|---|
| 13 Head Unit, etc. | 19 Subwoofer |
| 14 Front Output | 20 Dual Voice Coil Subwoofer |
| 15 Rear Output | 21 RCA Extension Cable (Sold Separately) |
| 16 Subwoofer Output | 22 Speaker-RCA Conversion Cable (Sold Separately) |
| 17 Front Speakers | 23 Y-Adapter (Sold Separately) |
| 18 Rear Speaker | |

For X-A70F, change the Input Channel Selector Switch (7)/(9) setting according to the number of channels of the speaker input.

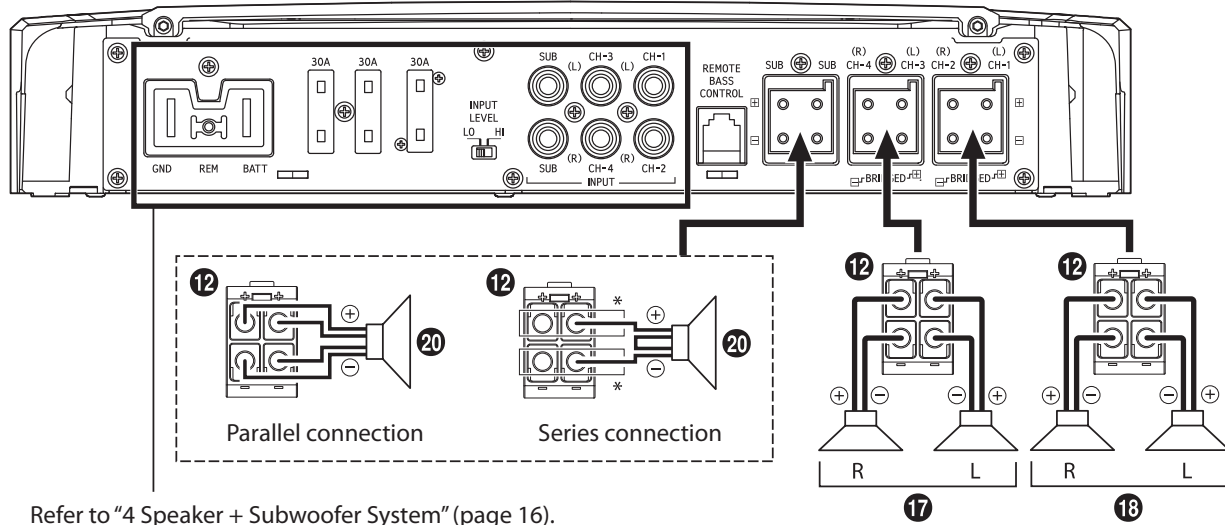
	5-Channel Input: 14 15 16	4-Channel Input: 14 15	2-Channel Input: 14
7			
9			

4 Speaker + Subwoofer System



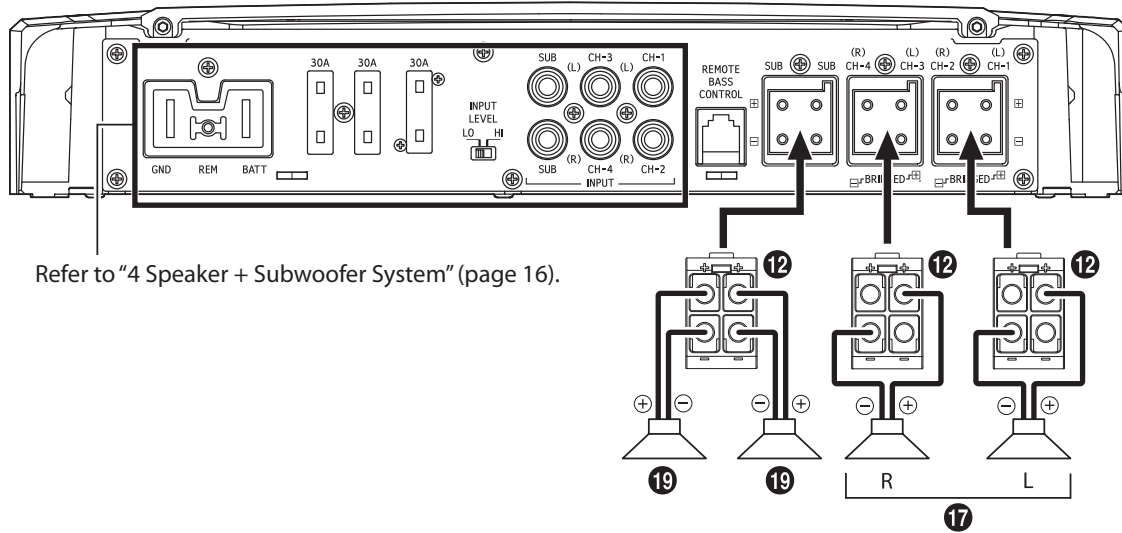
* If the connected head unit does not have a Speaker Output and RCA Extension Cables (21) cannot be used, you can use the Speaker-RCA Conversion Cable (22) (sold separately). For details on how to make a connection, see "About Connection to the Speaker Input Level System" (page 18).

4 Speaker + Dual Voice Coil Subwoofer System



* In the case of using a series connection, the lead wire of the Dual Voice Coil Subwoofer (20) can be connected to either the (+)/(-) terminal of the Speaker Connector (12).

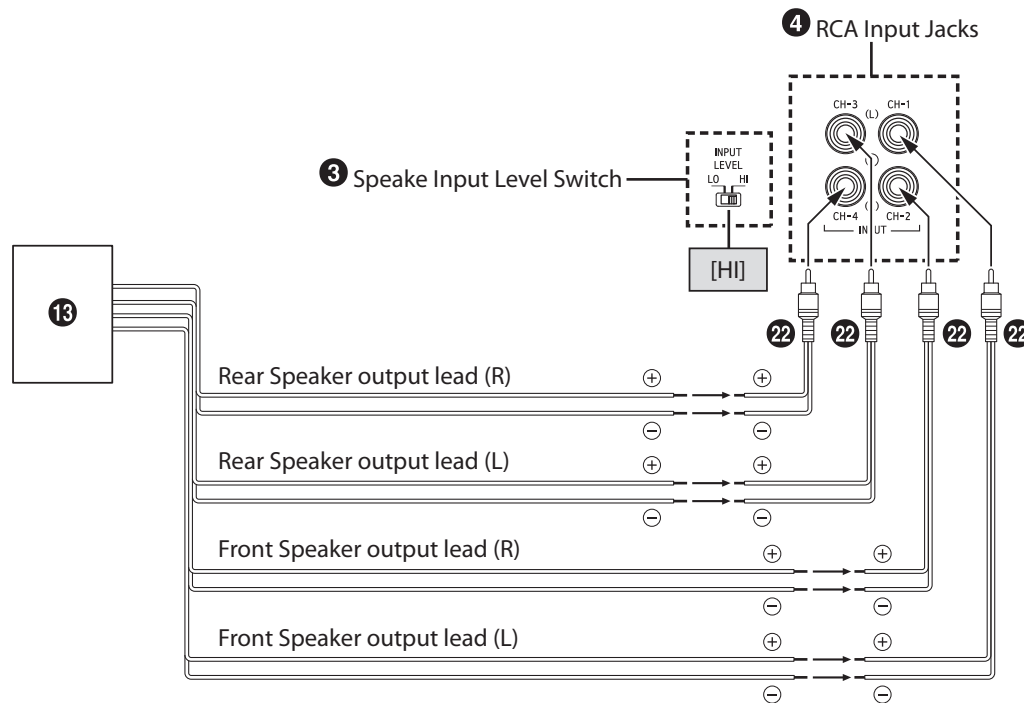
2 Speaker + 2 Subwoofer (MONO) System (Bridged Connections)



■ About Connecting to the Speaker Input Level System

When connecting by using the Speaker-RCA Conversion Cable (22) (sold separately), switch the Speaker Input Level Switch (3) to "HI".

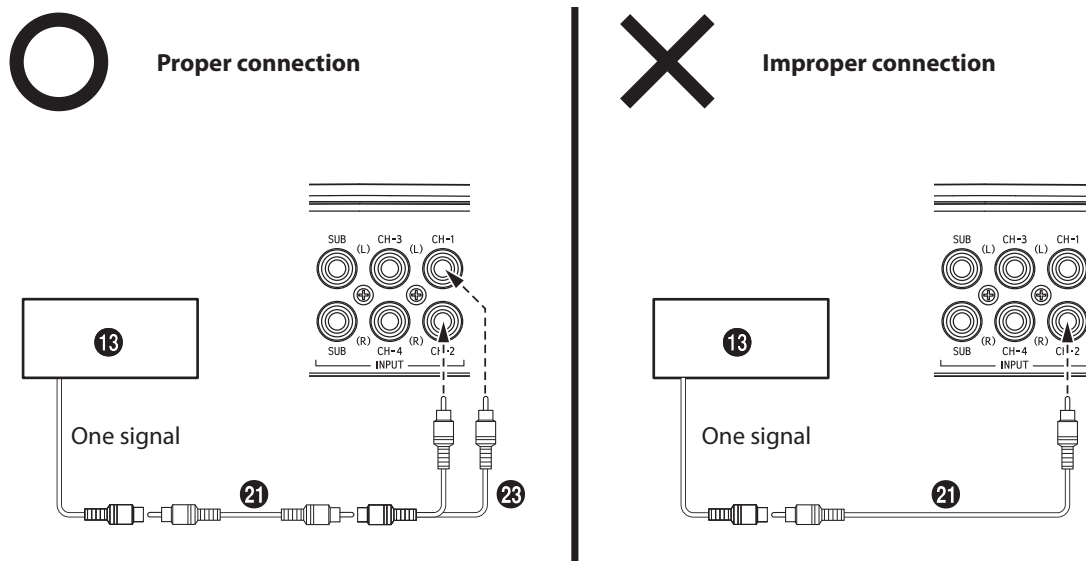
e.g X-A70F



- Do not mistake the Speaker Output Lead on the head unit side connected to this unit.
Front Speaker output (L)/(R) to CH1/CH2, Rear Speaker output (L)/(R) to CH3/CH4
- For the "Speaker Input Level System" setting, connecting the Remote Turn-On Lead is not required due to the "REMOTE SENSING" function of this product. However, the "REMOTE SENSING" function may not work depending on the signal source connected. In such a case, connect the Remote Turn-On Lead to an incoming power supply cord (accessory power) in the ACC position.

■ Important Tips on Bridging an Amplifier

Low output will result if only one channel input is used. The Y-adaptor is not required if a stereo/mono pair line output is used to drive both inputs of the bridged amp.



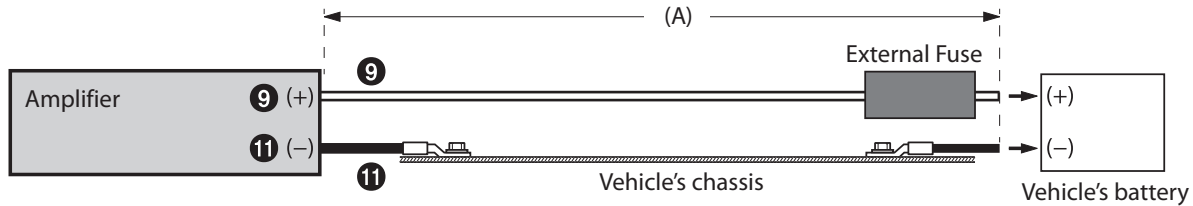
■ Cautions on Power Supply Wires

Use the specified wire size according to the total fuse capacity of the amplifier to be installed and the wire length.

For details on the wire size to be used, refer to the supplied "Cautions on Power Supply Wires Connection" and the following connection example.

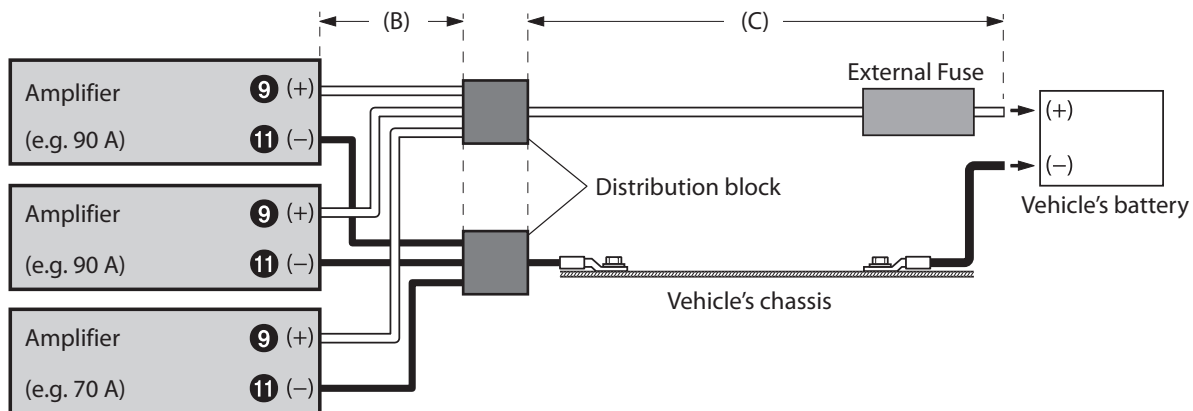
Connection example when installing an amplifier alone

- When the wire length from the amplifier to the vehicle's battery is 5 m
Wire size used for (A): 4 AWG/21 mm²
- External Fuse capacity: Make it equal to or larger than the fuse capacity of the amplifier
X-A90M/X-A90V: equal to or larger than 90 A
X-A70F: equal to or larger than 70 A



Connection example when installing two amplifiers with a fuse capacity of 90 A and one amplifier with 70 A

- When the wire length from each amplifier to the distribution block is 1 m
Wire size used for (B): 4 AWG/21 mm² (or 8 AWG/8 mm²)
- When the wire length from the distribution block to the vehicle's battery is 4 m
Wire size used for (C): 1/0 AWG/53 mm²
- External Fuse capacity: Make it equal to or larger than total fuse capacity of the number of amplifiers installed
90 A + 90 A + 70 A = equal to or larger than 250 A



NOTE:

- If the length of the power and ground cables exceed 1 m, or if you connect more than one amplifier, a distribution block should be used.

SPECIFICATIONS

■ X-A90M

Performance		
Power Output	Per Channel, Ref.: 4 Ω , 14.4 V	600 W RMS x 1
	Per Channel, Ref.: 2 Ω , 14.4 V	900 W RMS x 1
THD+N	Ref.: 10 W into 4 Ω	$\leq 0.02\%$
	Ref.: Rated Power into 4 Ω	$\leq 0.07\%$
S/N Ratio	IHF A-wtd + AES-17 Ref.: 1W into 4 Ω	> 83 dB
	IHF A-wtd + AES-17 Ref.: Rated Power into 4 Ω	> 107 dB
Frequency Response	+0/-3 dB, Ref.: 1 W into 4 Ω	8 Hz - 400 Hz
	+0/-1 dB, Ref.: 1 W into 4 Ω	10 Hz - 300 Hz
Damping Factor	Ref.: 10 W into 4 Ω at 100 Hz	$> 1,500$
Control		
Input Sensitivity	RCA Input Ref.: Rated Power into 4 Ω	Hi: 0.4 - 10 V Lo: 0.1 - 4.0 V
Crossover	Variable HPF/LPF	LPF: 50 Hz - 400 Hz (-24 dB/oct.)
	Variable Subsonic	8 Hz - 40 Hz (-24 dB/oct.)
Equalizer	Bass EQ ($f_c=50$ Hz)	0 to +12 dB (Variable)
Remote Level*	Linear Attenuation	0 to -20 dB
General		
Input Impedance		> 10 k Ω
Preamplifier Output	CH-1/2 Input Pass-through, Buffered	4 V max
Dimensions	Width	297 mm (11-3/4")
	Height	50.8 mm (2")
	Depth	192 mm (7-5/8")
Weight		3.2 kg (7 lb 1 oz)

* Requires optional RUX-KNOB or RUX-KNOB.2.

NOTE:

- Specifications and design are subject to change without notice.

■ X-A70F

Performance		
Power Output	Per Channel, Ref.: 4 Ω , 14.4 V	120 W RMS x 4
	Per Channel, Ref.: 2 Ω , 14.4 V	175 W RMS x 4
	Bridged, Ref.: 4 Ω , 14.4 V	350 W RMS x 2
THD+N	Ref.: 10 W into 4 Ω	$\leq 0.02\%$
	Ref.: Rated Power into 4 Ω	$\leq 0.07\%$
S/N Ratio	IHF A-wtd + AES-17 Ref.: 1W into 4 Ω	> 87 dB
	IHF A-wtd + AES-17 Ref.: Rated Power into 4 Ω	> 106 dB
Frequency Response	+0/-3 dB, Ref.: 1 W into 4 Ω	10 Hz - 60 kHz
	+0/-1 dB, Ref.: 1 W into 4 Ω	15 Hz - 30 kHz
Damping Factor	Ref.: 10 W into 4 Ω at 100 Hz	> 500
Control		
Input Select	Selectable Input Signal Configuration (2ch/4ch Input)	CH-3/4: CH-1/2 or CH-3/4
Input Sensitivity	RCA Input Ref.: Rated Power into 4 Ω	Hi: 0.5 - 10 V Lo: 0.2 - 4.0 V
Crossover	Variable HPF/LPF	50 Hz - 400 Hz (-12 dB/oct.)
Remote Level*	Linear Attenuation	0 to -20 dB
General		
Input Impedance		> 10 k Ω
Dimensions	Width	297 mm (11-3/4")
	Height	50.8 mm (2")
	Depth	192 mm (7-5/8")
Weight		3.2 kg (7 lb 1 oz)

* Requires optional RUX-KNOB.2.

NOTES:

- Specifications and design are subject to change without notice.
- To play back high res sound sources, it is necessary to make all the audio systems High-resolution audio compatible devices.

■ X-A90V

		CH-1/2/3/4	SUBWOOFER
Performance			
Power Output	Per Channel, Ref.: 4 Ω , 14.4 V	75 W RMS x 4	300 W RMS x 1
	Per Channel, Ref.: 2 Ω , 14.4 V	100 W RMS x 4	500 W RMS x 1
	Bridged, Ref.: 4 Ω , 14.4 V	200 W RMS x 2	–
THD+N	Ref.: 10 W into 4 Ω	$\leq 0.02\%$	$\leq 0.02\%$
	Ref.: Rated Power into 4 Ω	$\leq 0.07\%$	$\leq 0.07\%$
S/N Ratio	IHF A-wtd + AES-17 Ref.: 1W into 4 Ω	>87 dB	>80 dB
	IHF A-wtd + AES-17 Ref.: Rated Power into 4 Ω	>105 dB	>104 dB
Frequency Response	+0/-3 dB, Ref.: 1 W into 4 Ω	10 Hz - 60 kHz	8 Hz - 400 Hz
	+0/-1 dB, Ref.: 1 W into 4 Ω	15 Hz - 30 kHz	10 Hz - 300 Hz
Damping Factor	Ref.: 10 W into 4 Ω at 100 Hz	>500	>1,000
Control			
Input Select	Selectable Input Signal Configuration (2ch/4ch/6ch Input)	CH-3/4: CH-1/2 or CH-3/4	CH-1+2+3+4 or SUBWOOFER
Input Sensitivity	RCA Input Ref.: Rated Power into 4 Ω	Hi: 0.5 - 10 V Lo: 0.2 - 4.0 V	Hi: 0.4 - 10 V Lo: 0.1 - 4.0 V
Crossover	Variable HPF/LPF	HPF: 50 Hz - 400 Hz (-12 dB/oct.)	LPF: 50 Hz - 400 Hz (-24 dB/oct.)
	Variable Subsonic	–	8 Hz - 40 Hz (-24 dB/oct.)
Equalizer	Bass EQ (fc=50 Hz)	–	0 to +12 dB (Variable)
Remote Level*	Linear Attenuation	–	0 to -20 dB
General			
Input Impedance		>10 k Ω	
Dimensions	Width	297 mm (11-3/4")	
	Height	50.8 mm (2")	
	Depth	192 mm (7-5/8")	
Weight		3.3 kg (7 lb 4 oz)	

* Requires optional RUX-KNOB or RUX-KNOB.2.

NOTES:

- Specifications and design are subject to change without notice.
- To play back high res sound sources, it is necessary to make all the audio systems High-resolution audio compatible devices.

IMPORTANT TIP

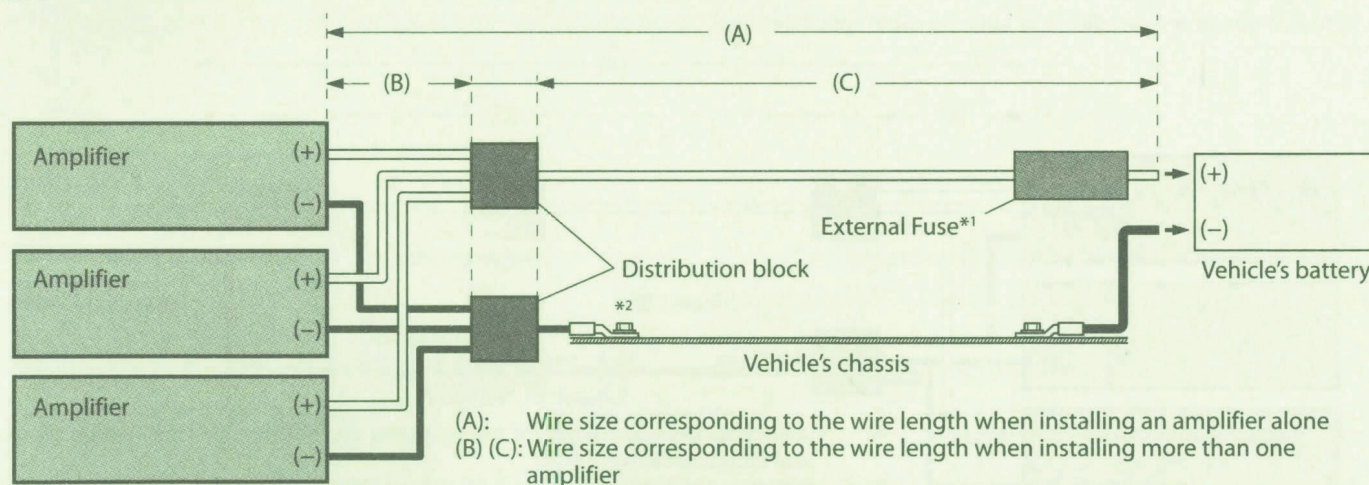


Cautions on Power Supply Wires Connection

When connecting the power supply wires, be sure to read the OWNER'S MANUAL and this document carefully, and then connect it correctly.

About power supply wires

Use the specified wire size according to the total fuse capacity of the amplifier to be installed and the specified wire length. For details, refer to "Caution on Power Supply Wires" in the OWNER'S MANUAL and this document and use the wire of the specified size.



*1 Be sure to add an External Fuse (e.g. Fuse Block, Circuit Breaker) with the battery lead as close as possible to the battery's positive (+) terminal.

*2 Connect all equipment to the same ground point while keeping wire length as short as possible.

Fuse capacity (Total)		30A max.	40A max.	50A max.	60A max.	70A max.	80A max.	90A max.	100A max.	200A max.	350A max.
BATTERY (+) GROUND (-)	1m										
	2m										
	3m		8 AWG (8 mm ²)							1/0 AWG (53 mm ²) or 4 AWG (21 mm ²) x 2	
	4m										1/0 AWG (53 mm ²)
	5m										
	6m										1/0 AWG x 2 (53 mm ² x 2)

About connection of power supply wires

For connecting the wire lead, note the following.

- Remove the insulation from the ends of the wire leads by about 7-10 mm (9/32"–13/32"), and then twist the core line (lead wire part) of the tip.
- When connecting the wire leads, use the screws attached with the Power Supply Terminal or Battery Connector of the amplifier to tighten them.
 - Due to the specification of the Power Supply Terminal of the amplifier, wire leads may be fixed using a wire with a round terminal.
- For details on connecting the wire lead, refer to the supplied OWNER'S MANUAL and be sure to connect securely by following the specified method.



Verification Certificate **PASSED**

Date : 2017.06.09

Load Impedance : 2 ohms

Model : X-A70F

Test Voltage : 14.4V D.C

Serial : XXXXXXXXXX

— ACTUAL TEST MEASUREMENT —

● TEST

● SPECIFICATION

● ACTUAL

Output Power(RMS) 175W min (Full range)

215 W

ALPINE ELECTRONICS, INC.



Thank you for choosing Alpine for your car audio equipment needs. Our goal is to produce the best audio/video/navigation products in the world and hope your expectations are met.

Please take a moment to protect your purchase by registering your product now at the following address: www.alpine-usa.com/registration. You will be informed of product and software updates (if applicable), special promotions, and news about Alpine. Also, by registering your product, you will automatically be entered for a chance to win various prizes such as gift cards, Alpine products, and/or a complete system.

We look forward to continue serving you in the future.

Sincerely,

The Alpine Team

French

Nous vous remercions d'avoir porté votre choix sur un équipement audio automobile Alpine. Notre principal objectif est de fabriquer les meilleurs produits audio, vidéo et de navigation au monde afin de répondre aux exigences de nos clients.

Veuillez prendre quelques instants pour sécuriser votre achat en enregistrant votre produit à l'adresse suivante : www.alpine-usa.com/registration. Vous serez tenu informé des nouveaux produits, des mises à jour logicielles (le cas échéant), des promotions spéciales et des informations concernant Alpine. L'enregistrement de votre produit vous donne par ailleurs la possibilité de gagner des dizaines de cadeaux, tels que chèques-cadeaux et articles Alpine, ainsi qu'un système complet.

Nous espérons que nos produits vous donneront entièrement satisfaction.

Cordialement,

L'équipe Alpine

Spanish

Gracias por elegir Alpine para las necesidades de equipamiento de audio de su vehículo. Nuestro objetivo es fabricar los mejores productos de audio/ vídeo/navegación del mundo y esperamos poder cumplir sus expectativas.

Dedique unos momentos a proteger su compra: registre ahora su producto en la siguiente dirección: www.alpine-usa.com/registration. Recibirá información de novedades sobre el producto y actualizaciones de software (si se producen), promociones especiales y noticias de última hora de Alpine. Asimismo, si registra su producto, entrará automáticamente en el sorteo de diversos premios, como tarjetas de regalo, productos de Alpine y/o un sistema completo.

Esperamos poder seguir ofreciéndole el mejor servicio en el futuro.

Atentamente,

El equipo de Alpine



GARANTIE LIMITÉE

Fidèle à son engagement de ne fournir que des produits de qualité, ALPINE ÉLECTRONIQUE DE L'AMÉRIQUE, INC. (« Alpine ») est heureuse de vous offrir cette garantie. Nous vous suggérons de le lire attentivement et en entier. Si vous avez la moindre question, veuillez contacter l'un de nos concessionnaires ou appeler directement Alpine aux numéros listés ci-dessous.

● PRODUITS COUVERTS PAR LA GARANTIE

Cette garantie couvre les produits audio de voiture et les accessoires connexes (« le produit »). Elle ne couvre les produits que dans le pays où ils ont été achetés.

● DURÉE DE LA GARANTIE

Cette garantie est en vigueur pendant un an à partir de la date du premier achat du client.

● PERSONNES PROTÉGÉES PAR LA GARANTIE

Seul l'acheteur original du produit, s'il réside aux États-Unis, à Porto Rico ou au Canada, peut se prévaloir de la garantie.

● CE QUI EST COUVERT

Cette garantie couvre tous les défauts de matériaux et de fabrication (pièces et main d'œuvre) du produit.

● CE QUI N'EST PAS COUVERT

Cette garantie ne couvre pas ce qui suit:

- ① Les dommages survenus durant le transport des produits renvoyés à Alpine pour être réparés (les réclamations doivent être adressées au transporteur);
- ② Les dégâts provoqués par un accident ou une mauvaise utilisation, y compris des bobines acoustiques grillées suite à une surexcitation des enceintes (augmentation du niveau de l'amplificateur jusqu'à atteindre un effet de distorsion ou d'écrêtage), une défaillance mécanique des enceintes (perforations, déchirures ou fentes), panneaux LCD fissurés ou endommagés, disques durs endommagés ou ayant subi une chute.
- ③ Tout dégât provoqué par négligence, usage inapproprié, mauvaise utilisation ou par le non-respect des instructions indiquées dans le manuel de l'utilisateur.
- ④ Les dommages dus à la force majeure, notamment aux tremblements de terre, au feu, aux inondations, aux tempêtes ou aux autres cataclysmes naturels;
Les frais ou les dépenses relatifs à l'enlèvement ou à la réinstallation du produit;
- ⑤ Les services rendus par une personne, physique ou morale non autorisée;
- ⑥ Les produits dont le numéro de série a été effacé, modifié ou retiré;
- ⑦ Les produits qui ont été adaptés ou modifiés sans le consentement d'Alpine;
- ⑧ Les produits qui ne sont pas distribués par Alpine aux États-Unis, à Porto Rico ou au Canada;
- ⑨ Les produits qui n'ont pas été achetés par l'entremise d'un concessionnaire Alpine autorisé;

● COMMENT SE PRÉVALOIR DE LA GARANTIE

- ① Il vous faut remettre le produit nécessitant des réparations à un centre de service autorisé Alpine ou à Alpine même et en assumer les frais de transport. Alpine a le choix entre réparer le produit ou le remplacer par un produit neuf ou révisé, le tout sans frais pour vous. Si les réparations sont couvertes par la garantie et si le produit a été envoyé à un centre de service Alpine ou à Alpine, le paiement des frais de réexpédition du produit incombe Alpine.

- ② Vous devez donner une description détaillée des problèmes qui sont à l'origine de votre demande de réparation.
- ③ Vous devez joindre la preuve de votre achat du produit.
- ④ Vous devez emballer soigneusement le produit pour éviter tout dommage durant son transport. Pour éviter la perte de l'envoi, il est conseillé de choisir un transporteur qui propose un service de suivi des envois.

● LIMITATION DES GARANTIES TACITES

LA DURÉE DE TOUTES LES GARANTIES TACITES, Y COMPRIS LA GARANTIE D'ADAPTATION À L'UTILISATION ET LA GARANTIE DE QUALITÉ LOYALE ET MARCHANDE, EST LIMITÉE À CELLE DE LA GARANTIE EXPRESSE DÉTERMINÉE CI-DESSUS. PERSONNE N'EST AUTORISÉ À ENGAGER AUTREMENT LA RESPONSABILITÉ D'ALPINE EN VERTU DE LA VENTE D'UN PRODUIT.

● EXCLUSIONS DE LA GARANTIE

ALPINE STIPULE EXPRESSÉMENT QU'ELLE N'EST PAS RESPONSABLE DES DOMMAGES-INTÉRÊTS ET DOMMAGES INDIRECTS PROVOQUÉS PAR LE PRODUIT. LES DOMMAGES-INTÉRÊTS SONT LES FRAIS DE TRANSPORT DU PRODUIT VERS UN CENTRE DE SERVICE ALPINE, LA PERTE DE TEMPS DE L'ACHETEUR ORIGINAL, LA PERTE D'UTILISATION DU PRODUIT, LES BILLETS D'AUTOBUS, LA LOCATION DE VOITURES ET TOUS LES AUTRES FRAIS LIÉS À LA GARDE DU PRODUIT. LES DOMMAGES INDIRECTS SONT LES FRAIS DE RÉPARATION OU DE REMPLACEMENT D'AUTRES BIENS ENDOMMAGÉS SUITE AU MAUVAIS FONCTIONNEMENT DU PRODUIT. LES RECOURS PRÉVUS PAR LES PRÉSENTES EXCLUENT ET REMPLACENT TOUTE AUTRE FORME DE RECOURS.

● LIEN ENTRE LA GARANTIE ET LA LOI

La garantie vous donne des droits spécifiques, mais vous pouvez aussi jouir d'autres droits, qui varient d'un état ou d'une province à l'autre. En outre, certains états et certaines provinces interdisent de limiter la durée des garanties tacites ou d'exclure les dommages accessoires ou indirects. Dans ce cas, les limites et les exclusions de la garantie peuvent ne pas s'appliquer à vous.

● CLAUSE APPLICABLE AU CANADA SEULEMENT

Pour que la garantie soit valable, il faut qu'un centre d'installation autorisé ait installé le système audio pour l'auto dans votre véhicule et qu'il ait ensuite apposé son cachet sur la garantie.

● NUMÉROS D'APPEL DU SERVICE À LA CLIENTÈLE

Si vous avez besoin de nos services, veuillez appeler Alpine aux numéros ci-dessous pour le centre de service autorisé Alpine le plus proche.

AUDIO DE VOITURE	1-800-ALPINE-1 (1-800-257-4631)
NAVIGATION	1-888-NAV-HELP (1-888-628-4357)

Ou visitez notre site Web à l'adresse <http://www.alpine-usa.com>



LIMITED WARRANTY

ALPINE ELECTRONICS OF AMERICA, INC. ("Alpine"), is dedicated to quality craftsmanship and are pleased to offer this Warranty. We suggest that you read it thoroughly. Should you have any questions, please contact your Dealer or contact Alpine at one of the telephone numbers listed below.

● PRODUCTS COVERED:

This Warranty covers Car Audio Products and Related Accessories ("the product"). Products purchased in the Canada are covered only in the Canada. Products purchased in the U.S.A. are covered only in the U.S.A.

● LENGTH OF WARRANTY:

This Warranty is in effect for one year from the date of the first consumer purchase.

● WHO IS COVERED:

This Warranty only covers the original purchaser of the product, who must reside in the United States, Puerto Rico or Canada.

● WHAT IS COVERED:

This Warranty covers defects in materials or workmanship (parts and labor) in the product.

● WHAT IS NOT COVERED:

This Warranty does not cover the following:

- ① Damage occurring during shipment of the product to Alpine for repair (claims must be presented to the carrier).
- ② Damage caused by accident or abuse, including burned voice coils caused by over-driving the speaker (amplifier level is turned up and driven into distortion or clipping). Speaker mechanical failure (e.g. punctures, tears or rips). Cracked or damaged LCD panels. Dropped or damaged hard drives.
- ③ Damage caused by negligence, misuse, improper operation or failure to follow instructions contained in the Owner's manual.
- ④ Damage caused by act of God, including without limitation, earthquake, fire, flood, storms or other acts of nature. Any cost or expense related to the removal or reinstallation of the product.
- ⑤ Service performed by an unauthorized person, company or association.
- ⑥ Any product which has the serial number defaced, altered or removed.
- ⑦ Any product which has been adjusted, altered or modified without Alpine's consent.
- ⑧ Any product not distributed by Alpine within the United States, Puerto Rico or Canada.
- ⑨ Any product not purchased from an Authorized Alpine Dealer.

● HOW TO OBTAIN WARRANTY SERVICE:

- ① You are responsible for delivery of the product to an Authorized Alpine Service Center or Alpine for repair and for payment of any initial shipping charges. Alpine will, at its option, repair or replace the product with a new or reconditioned product without charge. If the repairs are covered by the warranty, and if the product was shipped to an Authorized Alpine Service Center or Alpine, Alpine will pay the return shipping charges.
- ② You should provide a detailed description of the problem(s) for which service is required.
- ③ You must supply proof of your purchase of the product.
- ④ You must package the product securely to avoid damage during shipment. To prevent lost packages it is recommended to use a carrier that provides a tracking service.

● HOW WE LIMIT IMPLIED WARRANTIES:

ANY IMPLIED WARRANTIES INCLUDING FITNESS FOR USE AND MERCHANTABILITY ARE LIMITED IN DURATION TO THE PERIOD OF THE EXPRESS WARRANTY SET FORTH ABOVE AND NO PERSON IS AUTHORIZED TO ASSUME FOR ALPINE ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THE PRODUCT.

● HOW WE EXCLUDE CERTAIN DAMAGES:

ALPINE EXPRESSLY DISCLAIMS LIABILITY FOR INCIDENTAL AND CONSEQUENTIAL DAMAGES CAUSED BY THE PRODUCT. THE TERM "INCIDENTAL DAMAGES" REFERS TO EXPENSES OF TRANSPORTING THE PRODUCT TO THE ALPINE SERVICE CENTER, LOSS OF THE ORIGINAL PURCHASER'S TIME, LOSS OF THE USE OF THE PRODUCT, BUS FARES, CAR RENTALS OR OTHERS COSTS RELATING TO THE CARE AND CUSTODY OF THE PRODUCT. THE TERM "CONSEQUENTIAL DAMAGES" REFERS TO THE COST OF REPAIRING OR REPLACING OTHER PROPERTY WHICH IS DAMAGED WHEN THIS PRODUCT DOES NOT WORK PROPERLY. THE REMEDIES PROVIDED UNDER THIS WARRANTY ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS.

● HOW STATE/PROVINCIAL LAW RELATES TO THE WARRANTY:

This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state and province to province. In addition, some states/provinces do not allow limitations on how long an implied warranty lasts, and some do not allow the exclusion or limitation of incidental or consequential damages. Accordingly, limitations as to these matters contained herein may not apply to you.

● IN CANADA ONLY:

This Warranty is not valid unless your Alpine car audio product has been installed in your vehicle by an Authorized Installation Center, and this warranty stamped upon installation by the installation center.

● HOW TO CONTACT CUSTOMER SERVICE:

Should the product require service, please call the following number for your nearest Authorized Alpine Service Center.

CAR AUDIO	1-800-ALPINE-1 (1-800-257-4631)
NAVIGATION	1-888-NAV-HELP (1-888-628-4357)

Or visit our website at: <http://www.alpine-usa.com>