

AM/FM Stereo Cassette Player
(120-2117)

Features

Faxback Doc. # 57140

Your Optimus AM/FM Stereo Cassette Player can be easily installed in almost any vehicle. The stereo will not operate when you remove its anti theft control panel. You can quickly remove and store the control panel in the supplied carry case and take it with you for added security.

The stereo's features include:

- Front CD IN Jack - lets you quickly connect a portable CD player to the stereo, so you can play your favorite CDs in your vehicle.
- Auto-Stop - stop's the tape when it reaches the end, to reduce wear on your tape and the cassette deck.
- Tone and Balance Controls - lets you adjust high and low sounds and the balance between left/right speakers, so you can tailor the sound to suit your preferences
- Metal/CrO2 - takes advantage of the improved sound quality of metal or CrO2 tapes.
- Mono/Stereo Control - lets you select FM reception in stereo on strong stations or monaural reception on weak stations.
- Push Band Selector - lets you easily select an AM or FM station with the push of a button.
- Built-In Noise-Suppression Choke - reduces the noise caused by your vehicle's electrical system.

For your permanent records, we recommend you record your stereo's serial number in the space below. The serial number is on the top of the stereo.

Serial Number: _____

Before You Begin The Installation

Before you install your stereo, we recommend you read through all the instructions in this owner's manual. You should be able to answer all of these questions about your vehicle's electrical and sound systems.

Which terminal in my vehicle's fuse box supplies power even when the ignition is turned off?

Which terminal in my vehicle's fuse box is for accessories?

How do I connect a wire to the fuse box?

Which stereo wires are line-level outputs and which are speaker outputs?

Also, be aware that installation in your vehicle might require cutting or modifying your vehicle.

Note: Before permanent installation, we recommend that you install the stereo by temporarily connecting it to ground and power, optional components, and your speakers. Then test the connections. Next disconnect the stereo, mount it in your vehicle, and then reconnect it. Place the stereo as close as possible to the selected mounting location when making the temporary connections.

CAUTION: Be sure your speakers can handle 14 watts of power (7 watts per channel). Each speaker must have an impedance of at least 4 Ohms. Your local RadioShack store carries a full line of speakers.

Preparing the Mounting Area

Before you mount the stereo, make sure you have all the necessary materials. Then confirm that the stereo fits your vehicle's stereo mounting area. This auto-sound stereo system is a DIN-E size unit that requires a 2-1/16-inch high by 7-3/16-inch wide by 6-11/16-inch deep (52 x 182 x 170 mm) mounting area.

Note: If the mounting area is too large, you might be able to mount the stereo with an in-dash installation kit, available at your local RadioShack store. Follow the installation kit's instructions to mount the stereo.

CAUTION: Be careful to avoid obstructions behind the mounting surface.

Routing Speaker Wire

If you install speakers, avoid routing the speaker wires near moving parts or sharp edges. You can usually route them along the wiring channel beneath the vehicle's door facing by carefully removing the molding that holds the carpet in place. After you route the speaker wires, replace the molding.

Testing the Stereo

Before you mount the stereo or any speaker, test the stereo by temporarily connecting the power wire, speakers, and antenna as described in "Making the Connections," below. If you plan to use an adapter harness to connect the stereo, see "Using an Adapter Harness," below.

Making The Connections

The supplied harness with the 14-pin connector includes all the lead wires you need to connect the stereo to ground, power, optional components, and speakers.

IMPORTANT: Do not cut these wires. If you cut any wire, you cannot obtain a refund or exchange on this product. However, your local Radio Shack store will provide warranty service if you cut a wire and find the product is defective.

Depending on your individual auto sound system, you might need additional wire to complete connections. Your local RadioShack store carries a full line of wire and wire management accessories.

CAUTIONS: For added safety and to protect your stereo, remember to disconnect the cable from your vehicle battery's negative (-) terminal before you begin making the connections.

You must connect the ground and primary wires first, then make all other connections before you plug the 14-wire harness into the stereo. (See "Using an Adapter Harness," below.) If you do not make connections in the order shown, damage to the stereo is possible if any wire connections are made incorrectly.

You must connect a separate wire to each speaker terminal as described in the following procedure. Do not use a common wire or chassis ground for any speaker connection.

Using an Adapter Harness

If you are replacing an existing stereo, or if your vehicle has been factory-wired for auto sound components, you might be able to use an adapter harness to connect the power and speakers.

Follow the directions supplied with the adapter harness to temporarily connect the power and speakers.

A selection of adapter harnesses is available at your local RadioShack store.

Connecting Ground, Power, and Optional Components

Follow these steps to connect the supplied harness with the 14-pin connector to ground, primary and optional components.

1. Disconnect the cable from your vehicle battery's negative (-) terminal.
2. Connect the black GROUND (-) wire to a chassis ground, such as a metal screw attached to a metal part of the vehicle's frame. Be sure that the screw is not insulated from the chassis by a plastic part.
3. Connect the red +12V TO IGNITION wire (with the in-line fuse holder) to a point in your vehicle's fuse block that has power only when you turn the vehicle's ignition key to either the accessory (ACC) or ON position.

This connection turns on the stereo when you turn on the ignition or turn the key to ACC, and turns off the stereo when you turn off the ignition. This prevents your vehicle's battery from being drained if you leave the stereo on when you turn off the ignition.

4. Connect the yellow +12V TO BATTERY wire (with in-line fuse holder) to your vehicle battery's positive (+) terminal or to a point in your vehicle's fuse block that provides a continuous source of 12 volts.

This connection provides continuous power for the stereo's LED indicator when the faceplate is removed.

5. Cut the loop at the end of the blue AMP REMOTE TURN ON 500MA MAX wire, strip about 1/2 inch of insulation from its end, then connect it to any optional equipment (designed to run from a switched source) that you want the stereo to turn on and off (such as a power antenna).

This wire does not provide power to the component. It simply turns other equipment on or off. If you do not use this wire, secure it with a wire tie and do not let it touch metal.

Connecting Speakers

1. Connect the gray wire to the right speaker's positive terminal. This terminal is usually marked with a plus (+) sign or red mark.
2. Connect the gray/black wire to the right speaker's negative terminal. This terminal might be marked with a minus (-) sign or it might not be marked at all.
3. Connect the white wire to the left speaker's positive terminal.
4. Connect the white/black wire to the left speaker's negative terminal.

Connecting the Antenna

Connect the vehicle's antenna cable to the stereo's antenna jack at the back of the stereo.

Completing the Connections

After you have securely made all other connections, plug the 14-pin connector into the stereo's 14-pin wiring socket.

Then reconnect the cable to the vehicle's negative (-) battery terminal.

Testing The Connections

Turn on your vehicle's ignition, install the stereo's faceplate and test the stereo.

If the stereo does not work, immediately disconnect your vehicle battery's negative (-) terminal. Then recheck your connections.

After you test the stereo and verify that everything works, make sure the connections are marked or identified. Then follow the instructions in "Mounting the Stereo," below.

Mounting The Stereo

Be sure you test the stereo first and verify that it works properly.

Follow these steps to mount the stereo.

1. Disconnect the cable from the vehicle battery's negative (-) terminal.
2. Temporarily disconnect the wire harness and antenna.
3. Lift the top of the outer trim ring then pull it straight out to remove it.
4. Insert both of the supplied keys into the slots at the middle left and right sides of the stereo until they lock into place, and slide the sleeve off of the stereo.
5. Slide the sleeve into the dash and bend out all the side tabs with a screwdriver to secure the sleeve.
6. Reconnect the wire harness and the antenna.
7. Slide the stereo into the sleeve until it locks into place, then attach the outer trim ring to the front of the stereo.
8. Use the supplied hardware to attach one end of the supplied metal strap to the bolt on the back of the stereo. If necessary, bend the metal strap to fit your vehicle's mounting area. Then attach the other end of the strap to an existing bolt on a solid metal part of the vehicle. This strap also helps ensure proper electrical grounding of the stereo.
9. Reconnect the cable to the vehicle's negative (-) battery terminal. Then install the stereo's faceplate.

Removing The Stereo From the Dash

If you ever want to remove the stereo from the dash, follow these steps.

1. Disconnect the cable from the vehicle battery's negative (-) terminal.
2. Remove the metal strap attached to the back of the stereo.
3. Insert the left and right supplied release key (with tooth up) into the slot on both sides of the unit until the locking tab is released. Be sure R and L (printed on the keys) face out.
4. Pull up and back on the key so that the tip pushes down onto the release catch. Then slide the unit out of the sleeve.

Using The Anti-Theft Control Panel

The stereo's anti-theft control panel must be in place for the stereo to operate. When you remove the control panel, a red indicator flashes on the front of the stereo and the stereo cannot be used.

Installing The Anti-Theft Control Panel

CAUTION: Avoid pushing on the display or pressing any buttons while installing the control panel.

1. Insert the right edge of the faceplate into the right edge of the recess. Make sure the tabs in the recess fit into the slots in the edge of the faceplate.
2. Gently push the left edge of the faceplate into the recess until you hear a click.

Removing The Anti-Theft Control Panel

1. Press Release. You hear a click and the left side of the faceplate pops out slightly.
2. Pull the faceplate away from the stereo, then store it in the supplied carry case.

Turning the Stereo ON and OFF

CAUTION: Use common sense. Do not change your stereo's setting in heavy traffic or during hazardous driving condition.

To turn on the stereo, turn ON/VOL clockwise until it clicks. To turn off the stereo, turn ON/VOL counterclockwise until it clicks.

Adjusting The Sound/Tuning

When you listen to your stereo, adjust the following controls to suit your listening preference and tune the stereo.

ON/VOL - turn clockwise to increase or counterclockwise to decrease the volume.

WARNING: To protect your hearing, do not listen at high volume levels. Slowly increase the volume to a comfortable listening level.

BAL - rotate the outer control to adjust the balance between the left and right speakers.

TONE - rotate to decrease or increase low sounds.

TUN - rotate the inner control clockwise or counterclockwise to tune to the next station in the selected band.

Radio Operation

1. Rotate ON/VOL clockwise until it clicks to turn on the stereo.
2. Press BAND to select between AM and FM bands. The corresponding band indicator lights.
3. Press MO/ST to select FM mono and FM stereo in the FM band. ST lights when the radio receives an FM stereo station.

Note: If the reception is weak, press MO/ST once.

4. Tune to the desired station by rotating TUN/BAL.

Note: To improve reception of strong stations, press LO/DX. The LO indicator lights.

5. Adjust VOL, BAL and TONE, as desired.

Cassette Player Operation

WARNING: To prevent hearing damage, always turn the volume to its lowest level before you begin listening to a tape.

CAUTION: Avoid using C-120 cassette tapes. They are very thin and can easily become tangled in the tape-handling parts.

Follow these steps to play a cassette tape.

1. Take up any slack by turning the cassette's hub with your finger or a pencil. (Avoid touching the tape.)
2. Turn ON/VOL clockwise until it clicks to turn on the stereo.
3. Insert the tape into the cassette compartment with its open edge to the right. The tape begins to play, and the tape indicator lights.
4. If you are playing a metal or CrO₂ tape, press MTL. The MTL indicator lights.
5. Adjust VOL, BAL and TONE to suit your listening preference.
6. Press (/\>>) all the way to stop the tape and eject the cassette. The radio plays.

CAUTION: We recommend you press (/\>>) as soon as you finish playing a tape or before you leave your vehicle, to release it from the tape handling parts. This reduces the possibility of a tape being inadvertently tangled or damaged.

Note: When a tape reaches the end, the cassette player automatically stops and the radio plays, but the cassette player does not eject the tape

Fast-Forward and Rewind

To fast-forward the current side, press (/\>>) about half-way in and the button locks. The tape quickly winds. To stop fast-forward, press gently and lightly and the button releases.

To rewind a tape, simply eject the tape by pressing (/\>>) all the way

in, turn the tape over, then fast-forward the other side.

Using An External Component

You can connect a portable CD player or other audio component with a line level output or headphone jack to the stereo.

To make this connection, you need a stereo mini-jack cable with a 1/8-inch (3.5 mm) plug. Connect one end of the cable to the stereo's CD IN jack, then connect the cable's other end to the output jack of the CD player or component.

When you connect a CD player or other audio component then turn it on, you hear the component's sound through your speakers. You can use the stereo's controls to adjust the sound.

Notes: If you connect a CD player's or other audio component's headphone jack to the stereo, adjust the audio component's volume to a low level then adjust the stereo's volume to a comfortable listening level.

When you connect a cable into the stereo's CD IN jack, the radio and cassette player do not operate. Be sure you disconnect the CD player when you are not using it.

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Care and Maintenance

Faxback Doc. # 57144

To enjoy your Optimus AM/FM Stereo Cassette Player for a long time:

Keep the stereo dry. If it gets wet, wipe it dry immediately.

Handle the stereo gently and carefully. Don't drop it.

Keep the stereo away from dust and dirt.

Wipe the stereo with a damp cloth occasionally to keep it looking new.

Modifying or tampering with the stereo's internal components can cause a malfunction and invalidate its warranty. If your stereo is not performing as it should, take it to your local RadioShack store for assistance.

Cleaning The Tape Handling Parts

Dirt, dust or particles of the tape's coating can accumulate on the tape heads and other parts that the tape touches. This can greatly reduce the performance of the cassette player. After every 20 hours of tape player operation, use a cassette deck cleaning kit to clean the tape-handling parts.

Restoring Tape Tension And Sound Quality

After you play a cassette tape several times, the tape might become tightly wound on the reels. This can cause playback sound quality to deteriorate.

To restore sound quality, fast-forward the tape from the beginning to the end of one side, then completely rewind it. Then loosen the tape reels by gently tapping each side of the cassette's outer shell on a flat surface.

CAUTION: Be careful not to damage the cassette when tapping it. Do not touch the exposed tape or allow any sharp objects near the cassette.

Replacing A Fuse

If the stereo does not operate, you might need to replace the wire's fuse with the supplied spare fuse.

Follow these steps to replace either of your stereo's fuses.

1. Disconnect the cable from your vehicle's negative (-) battery terminal
2. To open either fuse holder, unlatch the two latches on the fuse holder until it springs apart.
3. Then slide off the metal holder on each end of the fuse and remove the fuse.
4. If the fuse is blown, replace it. Use only standard 1-1/4 inch fuses with the proper rating. The red +12 TO IGNITION wire's fuse must be 3 amps. The yellow +12V TO BATTERY wire's fuse must be 0.5 amps.

CAUTION: The supplied spare fuses have the correct rating. If you use a fuse with an incorrect rating, the stereo could be damaged.

5. Reassemble the fuse holder by squeezing it together until it latches.
6. Reconnect the cable to the vehicle's negative (-) battery terminal.

The FCC Wants You To Know

Your stereo might cause TV or radio interference even when it is operating properly. To determine whether your stereo is causing the interference, turn off your stereo. If the interference goes away, your stereo is causing the interference. Try to eliminate the interference by:

Moving your receiver away from the stereo.

Contacting your local RadioShack store for help.

If you cannot eliminate the interference, the FCC requires that you stop using your stereo.

AM/FM Stereo Cassette Player
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Faxback Doc. # 57145

Radio:

Frequency Range (FM Nominal): 88 - 108 MHz
(AM Nominal): 530 - 1710 kHz

IF Rejection (FM Nominal): 60 dB
(AM Nominal): 45 dB

Image Rejection (FM Nominal): 45 dB
(AM Nominal): 45 dB

Selectivity (FM Nominal): 35 dB
(AM Nominal): 28 dB

Signal-to-Noise (S/N) Ratio (FM Nominal): 58 dB
(AM Nominal): 45 dB

Stereo Separation (FM Nominal): 30 dB
(AM Nominal): ---

IHF Sensitivity (FM Nominal): 6 uV (3% THD)
(AM Nominal): 31.6 uV (20 dB S/N)

Cassette Player:

Cassette Mechanism: Auto Stop

Wow and Flutter: Less than 0.35% WRMS

Signal-to-Noise Ratio: 50 dB

Separation: 38 dB

Frequency Response (+/-3 dB): 125 - 8,000 Hz

General:

Power Source: 12 VDC Negative Ground

Speaker Output Impedance: 4 Ohms or 8 Ohms

Maximum Power Output: 7 W X 2 Channel

Chassis Size (HWD): 1-15/16 x 7 x 5-7/8 inches (50 x 178 x 150 mm)

Weight: 3 lbs. 5 ozs. (1.5 kg)

Specifications are typical; individual units might vary. Specifications
Are subject to change and improvement without notice.

(BR-EB 10/20/99)

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