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C7-100ct: 1-inch (25 mm) Component Tweeter

INTRODUCTION

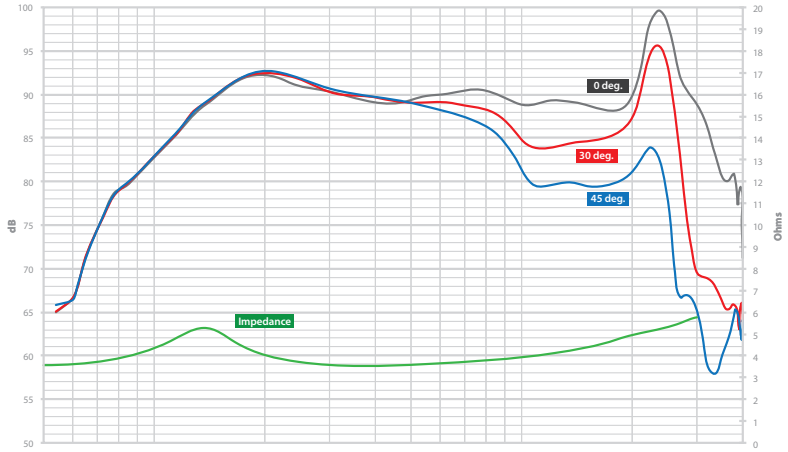
Thank you for choosing JL Audio C7 loudspeakers for your automotive sound system. C7 is the pinnacle of JL Audio loudspeaker design, benefitting from patented technologies and our most advanced development tools.

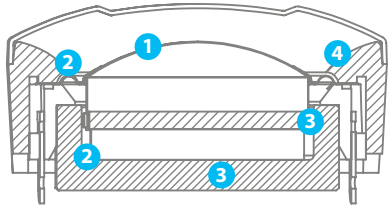
The C7-100ct is a component tweeter designed to deliver unparalleled high-frequency performance. Utilizing a corundum ceramic-coated aluminum alloy diaphragm with a treated silk, s-roll surround, it provides spectacularly detailed reproduction of treble frequencies and outstanding off-axis response. Distortion and non-linearities have been minimized through critical optimization of dynamic motor, diaphragm and suspension behaviors.

Flush and surface mounting fixtures are included to fit a variety of installation applications, as well as a 15µF protection capacitor to guard against damage from transient electrical pops (turn-on/off). This capacitor is not a substitute for high-pass filtering, but must be connected in all installations.

We do not recommend the use of passive crossover networks with C7 loudspeakers. Instead, we recommend a high-quality tuning DSP and a dedicated amplifier channel for each C7 loudspeaker in the system. Precise setup of equalization, delay and crossover filters will ensure optimal in-vehicle performance.

Should you have any questions regarding the instructions in this manual, please contact your authorized JL Audio dealer for assistance, or contact the JL Audio Technical Support Department.





DESIGN & TECHNOLOGIES

Dome Diaphragm:

1. Corundum ceramic-coated aluminum alloy diaphragm exhibits high stiffness, very low mass and excellent environmental stability.

Suspension Design:

2. The diaphragm's motion is centered, sprung and damped by a treated silk, s-roll surround. Ferrofluid in the magnetic gap acts as a rear suspension element in this design. The two combine to provide optimum damping without unduly restricting excursion.

Motor Design:

3. The C7-100ct employs a high-density magnetic circuit with a high-grade, neodymium magnet, and a specially machined, U-Yoke motor topology. An under-hung voice coil is employed, wound with copper-clad aluminum wire onto an aluminum voice coil former. Motor magnetics have been precisely optimized utilizing advanced FEA tools to lower even order distortion and IMD/AMD.

Acoustical Design:

4. The shape of the tweeter housing is designed to boost sensitivity in a very specific bandwidth, helping to flatten the frequency response. It also provides control of directivity.

C7-100ct: Specifications and Crossover Setting Guidelines

C7-100ct SPECIFICATIONS

Speaker Type: Component Tweeter

Nominal Diameter: 1 in. (25 mm)

Nominal Impedance (Znom): 4 ohms

Continuous Power Handling: 100W

Recommended Amplifier Power: 50-150W (RMS)

Net Weight: 0.25 lbs. (110 kg)

Parameters:

Voice Coil Resistance (Re): 3.20 ohms

Free Air Resonance (Fs): 1450 Hz

Reference Efficiency (no): 0.267%

Efficiency: 86.5 dB @ 1W/1m | 92.5 dB @ 1W/0.5m

Sensitivity: 89.5 dB @ 2.83V/1m

Design Bandwidth:

With 48 dB/octave filters: 3 kHz - 30 kHz

With 24 dB/octave filters: 4 kHz - 30 kHz

With 12 dB/octave filters: 5 kHz - 30 kHz

INCLUDED COMPONENT & PARTS

- One (1) C7-100ct 1.0-inch (25 mm) tweeter
- One (1) surface-mount fixture
- One (1) flush-mount fixture
- One (1) #8 metal spring clip (for flush-mounting)
- One (1) #8 flat metal spring nut (for surface-mounting)
- One (1) M4 x 30 mm machine screw
- One (1) #8 x 1.0-inch (25 mm) sheet metal screw
- One (1) 4.7 mm male crimpable connector
- One (1) 2.8 mm male crimpable connector
- One (1) 15 µF tweeter protection capacitor

C7 3-Way Speaker System

C7-650cw Woofer

Low-Pass: 24 dB/octave Linkwitz-Riley @ 400 Hz

Level Offset: 0 dB

C7-350cm Midrange

High-Pass: 24 dB/octave Linkwitz-Riley @ 480 Hz

Low-Pass: 24 dB/octave Linkwitz-Riley @ 3500 Hz

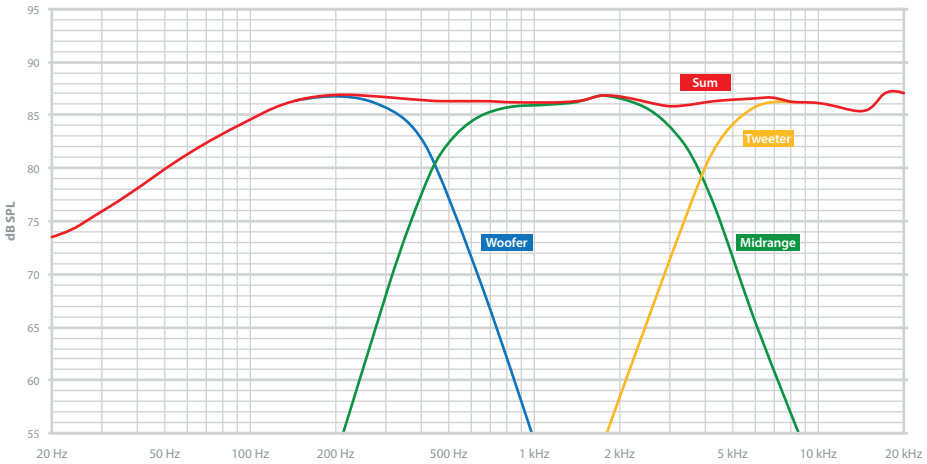
Level Offset: 0 dB

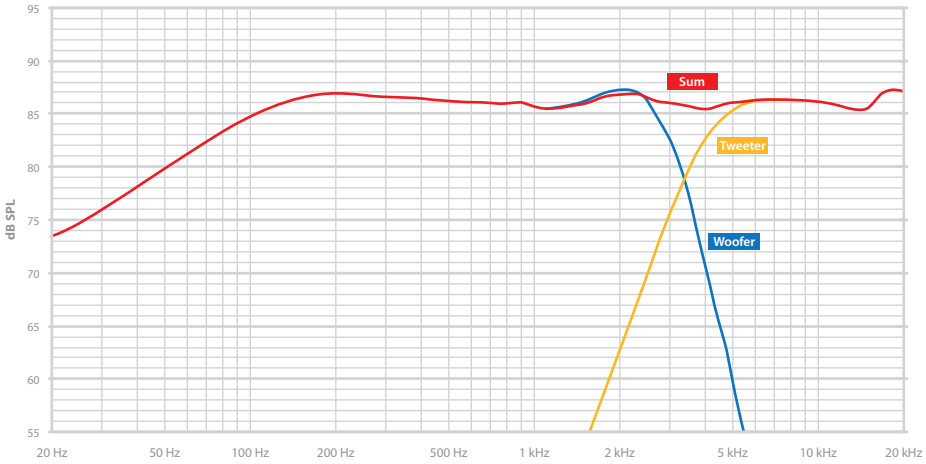
C7-100ct Tweeter

High-Pass: 24 dB/octave Linkwitz-Riley @ 4500 Hz

Level Offset: -1.0 dB

Please note: These are recommended starting points for tuning. In-vehicle measurements should be made to optimize the crossover for speaker placement and vehicle acoustics.





C7 2-Way Speaker System

C7-650cw Woofer

Low-Pass: 24 dB/octave Linkwitz-Riley @ 2700 Hz

Level Offset: 0 dB

C7-100ct Tweeter

High-Pass: 24 dB/octave Linkwitz-Riley @ 4000 Hz

Level Offset: -1.0 dB

Please note: These are recommended starting points for tuning. In-vehicle measurements should be made to optimize the crossover for speaker placement and vehicle acoustics.

C7-350cm: 3.5-inch (90 mm) Component Midrange

INTRODUCTION

Thank you for choosing JL Audio C7 loudspeakers for your automotive sound system. C7 is the pinnacle of JL Audio loudspeaker design, benefitting from patented technologies and our most advanced development tools.

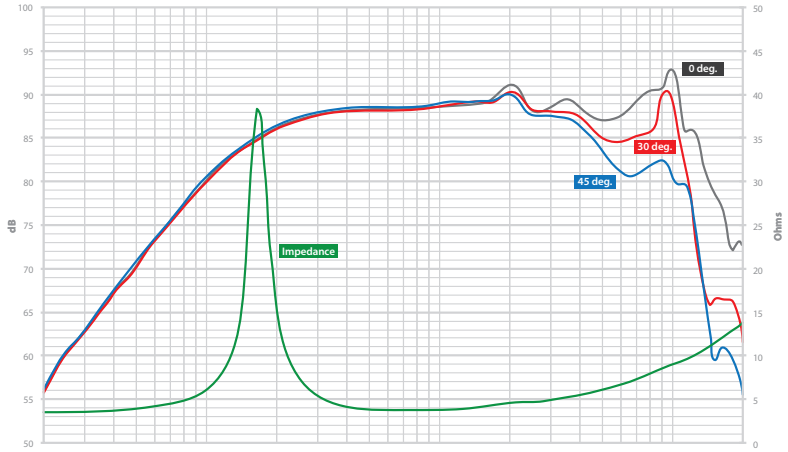
The C7-350cm is a component midrange designed to operate in a 3-way system, with a woofer and tweeter. It offers exceptional transient response and outstanding linearity, resulting in unsurpassed clarity and natural mid-range reproduction. Distortion and non-linearities have been minimized through critical optimization of dynamic motor and suspension behaviors.

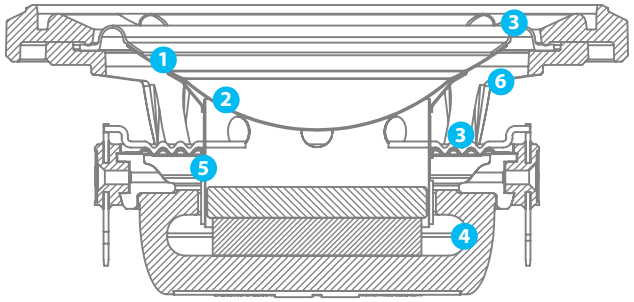
We do not recommend the use of passive crossover networks with C7 loudspeakers. Instead, we recommend a high-quality tuning DSP and a dedicated amplifier channel for each C7 loudspeaker in the system. Precise setup of equalization, delay and crossover filters will ensure optimal in-vehicle performance.

Should you have any questions regarding the instructions in this manual, please contact your authorized JL Audio dealer for assistance, or contact the JL Audio Technical Support Department.

INCLUDED COMPONENT & PARTS

- One (1) C7-350cm 3.50-inch (190 mm) midrange
- One (1) die-cast aluminum grille tray
- One (1) fine mesh steel grille
- One (1) spiral steel grille
- One (1) 4.7 mm female crimpable connector
- One (1) 2.8 mm female crimpable connector
- Four (4) #6 x 1.25-inch (32 mm) sheet metal screws





DESIGN & TECHNOLOGIES

Cone and Dust Cap:

1. Vacuum-formed, mineral-filled polypropylene material offers excellent damping and low mass. The cone body features a gentle curvilinear profile to optimize response.
2. A concave dust cap further improves high frequency behavior.

Suspension Design:

3. The moving assembly is suspended and damped via a linear profile spider formed from a Nomex®/polycotton blend, and a positive-roll, rubber surround. The two combine to provide optimum damping without prematurely restricting the C7-350cm's excursion capability.

Motor Design:

4. The C7-350cm employs a high-density magnetic circuit with a high-grade, neodymium magnet, and a specially machined, U-Yoke motor topology. Motor magnetics have been precisely optimized utilizing advanced FEA tools to reduce distortion and provide linear motor force throughout the driver's performance range.
5. A 36 mm (1.42 inch) diameter, overhung voice coil is employed, wound with copper-clad aluminum wire onto a fiberglass voice coil former. The oversized voice coil offers extended power handling capability, minimizing thermal compression and distortion at higher listening levels.

Chassis Design:

6. A purpose-engineered cast alloy basket is employed, featuring thin spokes to maximize rear open area, and our Patented Elevated Frame Cooling technology.

Built in USA with Global Components

C7-350cm: Specifications and Crossover Setting Guidelines

C7-350cm SPECIFICATIONS

Speaker Type: Component Midrange

Nominal Diameter: 3.5 in. (90 mm)

Nominal Impedance (Znom): 4 ohms

Continuous Power Handling: 100W

Recommended Amplifier Power: 50-150W (RMS)

Net Weight: 0.71 lbs. (0.32 kg)

Driver Rear Displacement: 0.0024 cu.ft. (0.068 liters)

Min. Recommended Sealed Enclosure:
0.014 cu.ft. (0.4 liters)

Parameters:

Voice Coil Resistance (Re): 3.245 ohms

Free Air Resonance (Fs): 156.9 Hz

Reference Efficiency (no): 0.270%

Efficiency: 86.5 dB @ 1W/1m | 92.5 dB @ 1W/0.5m

Sensitivity: 89.5 dB @ 2.83V/1m

Electrical "Q" (Qes): 0.590

Mechanical "Q" (Qms): 6.454

Total Speaker "Q" (Qts): 0.541

Equivalent Compliance (Vas): 0.015 cu.ft. (0.430 liters)

Moving Mass (Mms): 4.009 g

Mechanical Compliance (Cms): 0.000257 m/N

Magnetic Strength (BL): 4.66 N/A

Effective Piston Area (Sd): 5.31sq.in. (0.003426 sq. m)

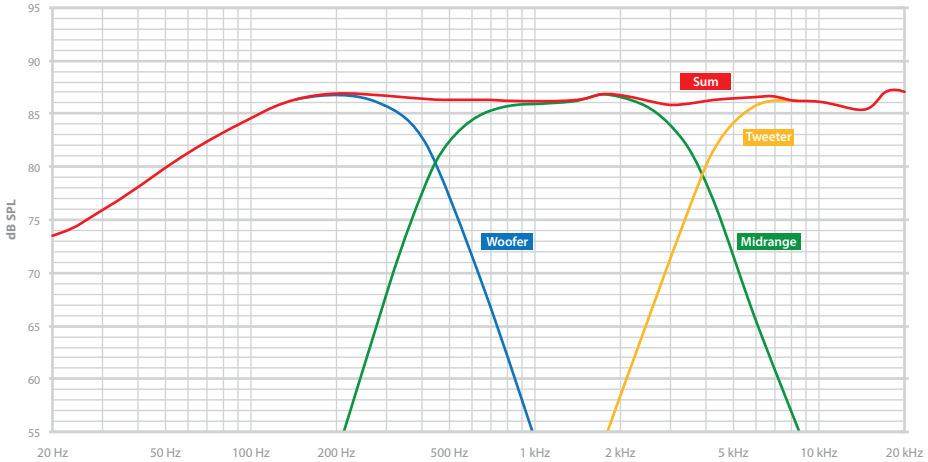
One-Way Linear Excursion (Xmax): 1 mm

Design Bandwidth:

With 48 dB/octave filters: 300 Hz - 10 kHz

With 24 dB/octave filters: 400 Hz - 10 kHz

With 12 dB/octave filters: 500 Hz - 10 kHz



C7 3-Way Speaker System

C7-650cw Woofer
Low-Pass: 24 dB/octave Linkwitz-Riley @ 400 Hz
Level Offset: 0 dB

C7-350cm Midrange
High-Pass: 24 dB/octave Linkwitz-Riley @ 480 Hz
Low-Pass: 24 dB/octave Linkwitz-Riley @ 3500 Hz
Level Offset: 0 dB

C7-100ct Tweeter
High-Pass: 24 dB/octave Linkwitz-Riley @ 4500 Hz
Level Offset: -1.0 dB

Please note: These are recommended starting points for tuning. In-vehicle measurements should be made to optimize the crossover for speaker placement and vehicle acoustics.

C7-650cw: 6.5-inch (165 mm) Component Woofer

INTRODUCTION

Thank you for choosing JL Audio C7 loudspeakers for your automotive sound system. C7 is the pinnacle of JL Audio loudspeaker design, benefitting from patented technologies and our most advanced development tools.

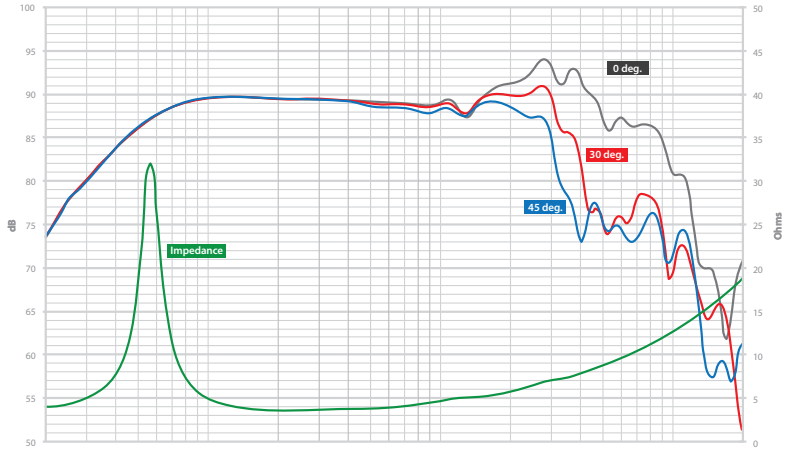
The C7-650cw is a component woofer capable of operating in a 3-way system, with a midrange and tweeter, or with only a tweeter in a 2-way configuration. It has exceptional linear excursion capability and outstanding linearity, resulting in solid mid-bass and pure, precise mid-range performance. Distortion and non-linearities have been minimized through critical optimization of dynamic motor and suspension behaviors.

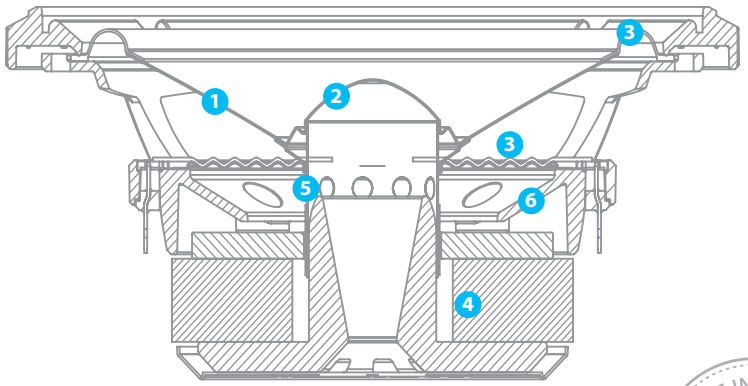
We do not recommend the use of passive crossover networks with C7 loudspeakers. Instead, we recommend a high-quality tuning DSP and a dedicated amplifier channel for each C7 loudspeaker in the system. Precise setup of equalization, delay and crossover filters will ensure optimal in-vehicle performance.

Should you have any questions regarding the instructions in this manual, please contact your authorized JL Audio dealer for assistance, or contact the JL Audio Technical Support Department.

INCLUDED COMPONENT & PARTS

- One (1) C7-650cw 6.50-inch (165 mm) woofer
- One (1) die-cast aluminum grille tray
- One (1) fine mesh steel grille
- One (1) spiral steel grille
- One (1) 6.35 mm female crimpable connector
- One (1) 4.7 mm female crimpable connector
- Eight (8) #8 x 1.25-inch (32 mm) sheet metal screws





DESIGN & TECHNOLOGIES

Cone and Dust Cap:

1. Vacuum-formed, mineral-filled polypropylene material offers excellent damping and low mass. The cone body features a gentle curvilinear profile to optimize response.
2. A specially shaped dust cap attaches to the cone body and the voice coil former to improve high frequency behavior.

Suspension Design:

3. The moving assembly is suspended and damped via a large-diameter, linear profile spider formed from a Nomex®/polycotton blend, and a positive-roll, rubber surround. The two combine to provide optimum damping without prematurely restricting the C7-650cw's outstanding excursion capability.

Motor Design:

4. The C7-650cw employs a high-density magnetic circuit with a high-grade Y35 Strontium-ferrite magnet, and a specially machined, T-Yoke motor topology. Motor magnetics have been precisely optimized utilizing advanced FEA tools to reduce distortion and provide linear motor force throughout the driver's performance range.
5. A 32 mm (1.27 inch) diameter, overhung voice coil is employed, wound with copper wire onto a fiberglass voice coil former. The oversized voice coil offers extended power handling capability, minimizing thermal compression and distortion at higher listening levels.

Chassis Design:

6. A purpose-engineered cast alloy basket is employed, featuring thin spokes to maximize rear open area, and our Patented Elevated Frame Cooling technology.

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C7-650cw: Specifications and Crossover Setting Guidelines

C7-650cw SPECIFICATIONS

Speaker Type: Component Woofer

Nominal Diameter: 6.5 in. (165 mm)

Nominal Impedance (Znom): 4 ohms

Continuous Power Handling: 125W

Recommended Amplifier Power: 50-175W (RMS)

Net Weight: 3.28 lbs. (1.49 kg)

Driver Rear Displacement: 0.0135 cu.ft. (0.382 liters)

Min. Recommended Sealed Enclosure:
0.424 cu.ft. (12 liters)

Parameters:

Voice Coil Resistance (Re): 3.114 ohms

Free Air Resonance (Fs): 54.5 Hz

Reference Efficiency (no): 0.304%

Efficiency: 87.0 dB @ 1W/1m | 93.0 dB @ 1W/0.5m

Sensitivity: 90.0 dB @ 2.83V/1m

Electrical "Q" (Qes): 0.669

Mechanical "Q" (Qms): 6.265

Total Speaker "Q" (Qts): 0.605

Equivalent Compliance (Vas): 0.461 cu.ft. (13.05 liters)

Moving Mass (Mms): 17.679 g

Mechanical Compliance (Cms): 0.000482 m/N

Magnetic Strength (BL): 5.31 N/A

Effective Piston Area (Sd): 21.4 sq.in. (0.013807 sq. m)

One-Way Linear Excursion (Xmax): 5 mm

Design Bandwidth:

With 48 dB/octave filters: 50 Hz - 5 kHz

With 24 dB/octave filters: 60 Hz - 5 kHz

With 12 dB/octave filters: 70 Hz - 5 kHz

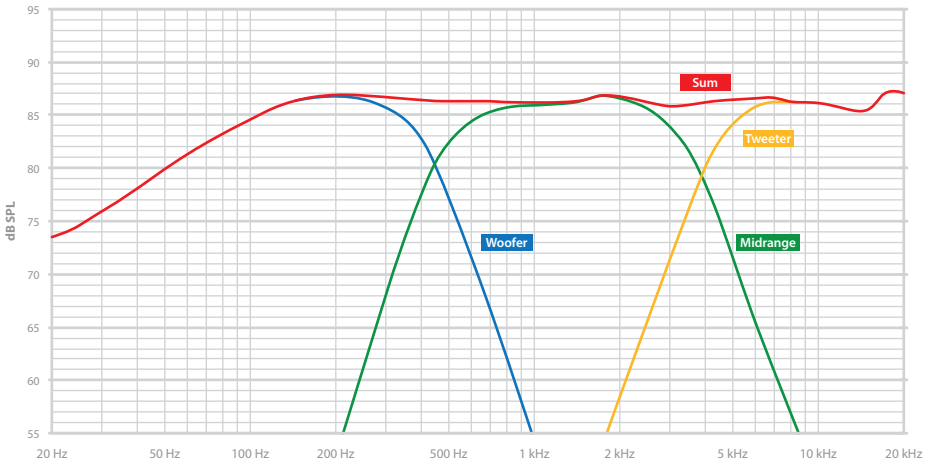
C7 3-Way Speaker System

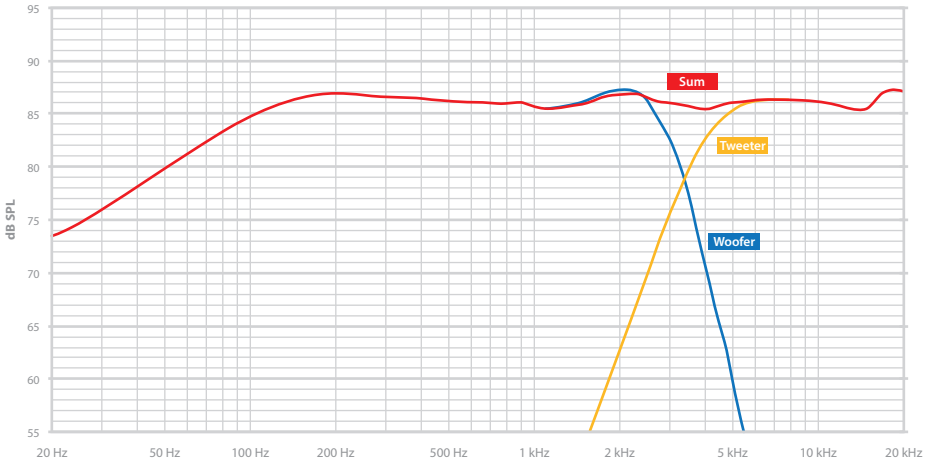
C7-650cw Woofer
Low-Pass: 24 dB/octave Linkwitz-Riley @ 400 Hz
Level Offset: 0 dB

C7-350cm Midrange
High-Pass: 24 dB/octave Linkwitz-Riley @ 480 Hz
Low-Pass: 24 dB/octave Linkwitz-Riley @ 3500 Hz
Level Offset: 0 dB

C7-100ct Tweeter
High-Pass: 24 dB/octave Linkwitz-Riley @ 4500 Hz
Level Offset: -1.0 dB

Please note: These are recommended starting points for tuning. In-vehicle measurements should be made to optimize the crossover for speaker placement and vehicle acoustics.





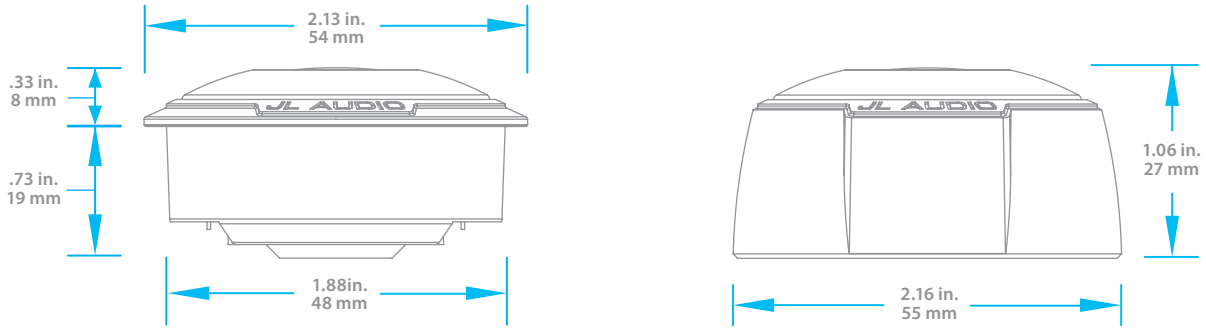
C7 2-Way Speaker System

C7-650cw Woofer
Low-Pass: 24 dB/octave Linkwitz-Riley @ 2700 Hz
Level Offset: 0 dB

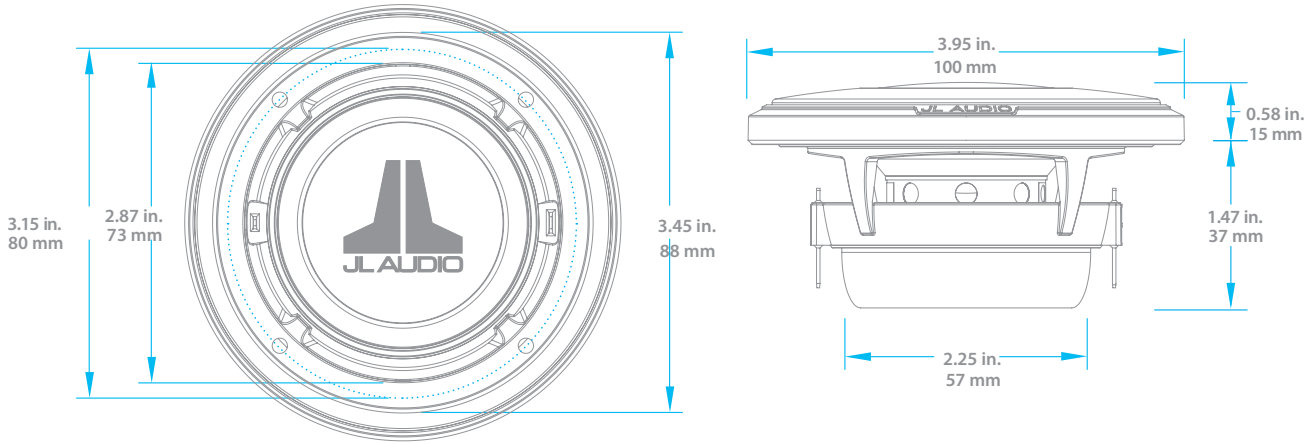
C7-100ct Tweeter
High-Pass: 24 dB/octave Linkwitz-Riley @ 4000 Hz
Level Offset: -1.0 dB

Please note: These are recommended starting points for tuning. In-vehicle measurements should be made to optimize the crossover for speaker placement and vehicle acoustics.

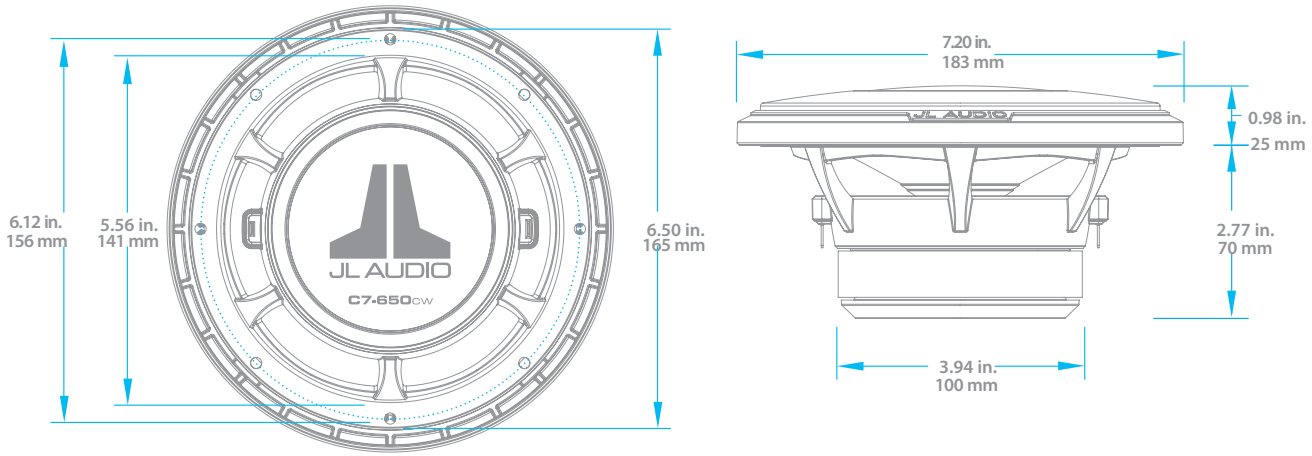
C7-100ct: Dimensions



C7-350cm: Dimensions



C7-650cw: Dimensions



C7-100ct: Installation

TWEETER INSTALLATION

C7 tweeters have been designed for surface or flush-mounting. Before choosing a method, carefully inspect the desired mounting location to determine which method will work best.

Surface-Mount: uses the supplied surface-mount fixture and requires the drilling of three holes (two for the wires and one for the mounting screw). This application is useful when mounting the tweeters to a panel that has insufficient clearance behind it for the tweeter's magnet structure.

Flush-Mount: yields a custom-installed appearance and requires a 1.88-inch (48 mm) diameter hole to be cut in the vehicle panel. At least 1.75-inch (44 mm) of clearance is required behind the tweeter mounting surface for the spring clip and 1-inch machine screw used to mount the fixture. In limited depth applications, it may be necessary to cut down the length of the machine screw, or to use a shorter screw (not supplied). Hand-tighten the machine screw until the fixture is secure, as shown in Diagram C.

PROTECTION CAPACITOR

A high-quality 15µF protection capacitor is included with the C7-100ct to guard against damage from transient electrical pops (turn-on/off). This capacitor is not a substitute for high-pass filtering and must be connected in all installations. The capacitors value has been selected so as not to interfere with a properly set active high-pass filter.

The protection capacitor supplied with your C7-100ct should be installed in a dry location and as near as possible to the tweeter. Connect the protection capacitor in-line (series) with the tweeter's positive (+) lead, as shown in Diagram A below. The capacitor is bipolar and may be connected in either direction. Make sure to insulate the capacitor's leads to guard from touching against any exposed metal. Use plastic cable ties or a similar fastener to securely mount the capacitor to avoid coming loose in the event of a collision, sudden jolt or repeated vibrations during normal use. Make sure that your mounting location will not cause damage to wiring or any other vital component of your vehicle.

TWEETER CONNECTIONS

Run the wire leads from the tweeter mounting locations to the amplifier outputs. Then connect the harness wire leads to the speaker/amplifier outputs and tweeters, observing correct polarity. See Diagram A below for details.

!! WARNING

It is absolutely vital that the protection capacitor is connected, as shown in Diagram A. Failure to connect the protection capicitor as shown will result in damage which is NOT covered under warranty.

Diagram A:
Tweeter / Protection Capacitor Wiring

C7-350cm: Installation

CROSSOVER CONSIDERATIONS

Passive crossover networks are not included with C7 drivers, as they are designed for active systems. Actively configured systems allow all filtering and/or equalization to be configured prior to reaching the amplifier, thus avoiding the technical compromises of passive crossover networks. The result is linear, crystal clear audio output and minimal distortion. **For optimum performance, we strongly recommend the use of a high-quality DSP and a dedicated amplifier channel.**

SPEAKER WIRING

If you will be using the factory speaker wires, it may be necessary to change the terminations. This may be accomplished by using an adaptor plug or simply by cutting the factory connector off and using the supplied crimp connectors to terminate the speaker wires. The larger connector is for the positive terminal and the smaller connector is for the negative terminal of the C7-350cm.

If you choose to run new speaker wires, protect all wiring from sharp edges by carefully routing them, securing them and using grommets and loom where appropriate. If you are running wires into a door, use existing factory wiring boots whenever possible. If you are drilling new holes, file their edges and install rubber grommets into each hole. Wires running into car doors should be covered with a protective, flexible PVC sleeve. Make sure that the wires will clear door hinges and other structures in the door.

SPEAKER INSTALLATION

The speakers should be installed in one of the following ways depending on location:

Factory Location: Your new speakers have been designed to install, without modifications, into most vehicles that accept a 3.50-inch (90 mm) speaker. Most factory 3.50-inch speakers use four mounting screws which will line up with the mounting holes on your woofers.

It is absolutely vital that the speaker frame fits into the mounting hole cleanly. This must be checked prior to tightening the screws. Do not force the frame into a hole that is too small. Do not tighten the speaker onto an uneven mounting surface. This will damage your speakers. The speaker should also fit so that air does not leak around the mounting flange. Air leaks will cause a severe degradation in sound quality. Seal any air leaks with an automotive-grade sealant material. Hand-tighten the screws evenly in a criss-cross pattern to avoid bending the speaker frame or stripping the mounting screw holes. (See Diagram C).

Custom Location: Select a desired mounting location with an even surface. Tightening a speaker onto an uneven mounting surface can damage it. Mark the center and the outline of the speaker's mounting hole. Before drilling or cutting on your interior panels, use a utility knife to cut any fabric, vinyl or leather from hole locations. These materials can easily be snagged by a drill or a saw, causing damage to the panel and possible bodily injury. Drill a pilot hole in the center of the proposed speaker mounting hole. Then, using an appropriate cutting tool, make the circular cut out for the speaker. File any rough edges.

After cutting the hole, check to see that the speaker frame fits into its mounting hole cleanly. Do not force the frame into a hole that is too small. Once the speaker is in place, use the holes on the speaker's mounting flange to mark the panel where the four mounting screws will be positioned (See Diagram D). Remove the speaker and drill 7/64-inch (2.78mm) holes at each mark. Connect the speaker wires, observing correct polarity, and secure the speaker and grille tray to the panel by evenly tightening by hand the provided #6 x 1.25 inch (32 mm) mounting screws. Make sure the speaker is secured so that air does not leak around the mounting flange. Air leaks will cause a severe degradation in sound quality. Seal any air leaks with an automotive-grade sealant material.

Finally, select your preferred grille style and insert it into the grille tray, pressing around its edge until seated firmly in the tray.

C7-650cw: Installation

CROSSOVER CONSIDERATIONS

Passive crossover networks are not included with C7 drivers, as they are designed for active systems. Actively configured systems allow all filtering and/or equalization to be configured prior to reaching the amplifier, thus avoiding the technical compromises of passive crossover networks. The result is linear, crystal clear audio output and minimal distortion. **For optimum performance, we strongly recommend the use of a high-quality DSP and a dedicated amplifier channel.**

SPEAKER WIRING

If you will be using the factory speaker wires, it may be necessary to change the terminations. This may be accomplished by using an adaptor plug or simply by cutting the factory connector off and using the supplied crimp connectors to terminate the speaker wires. The larger connector is for the positive terminal and the smaller connector is for the negative terminal of the C7-650cw.

If you choose to run new speaker wires, protect all wiring from sharp edges by carefully routing them, securing them and using grommets and loom where appropriate. If you are running wires into a door, use existing factory wiring boots whenever possible. If you are drilling new holes, file their edges and install rubber grommets into each hole. Wires running into car doors should be covered with a protective, flexible PVC sleeve. Make sure that the wires will clear door hinges and other structures in the door.

SPEAKER INSTALLATION

The speakers should be installed in one of the following ways depending on location:

Factory Location: Your new speakers have been designed to install, without modifications, into most vehicles that accept a 6.50-inch (165 mm) speaker. Most factory 6.50-inch speakers use four mounting screws which will line up with the mounting holes on your woofers.

It is absolutely vital that the speaker frame fits into the mounting hole cleanly. This must be checked prior to tightening the screws. Do not force the frame into a hole that is too small. Do not tighten the speaker onto an uneven mounting surface. This will damage your speakers. The speaker should also fit so that air does not leak around the mounting flange. Air leaks will cause a severe degradation in sound quality. Seal any air leaks with an automotive-grade sealant material. Hand-tighten the screws evenly in a criss-cross pattern to avoid bending the speaker frame or stripping the mounting screw holes. (See Diagram C).

Custom Location: Select a desired mounting location with an even surface. Tightening a speaker onto an uneven mounting surface can damage it. Mark the center and the outline of the speaker's mounting hole. Before drilling or cutting on your interior panels, use a utility knife to cut any fabric, vinyl or leather from hole locations. These materials can easily be snagged by a drill or a saw, causing damage to the panel and possible bodily injury. Drill a pilot hole in the center of the proposed speaker mounting hole. Then, using an appropriate cutting tool, make the circular cut out for the speaker. File any rough edges.

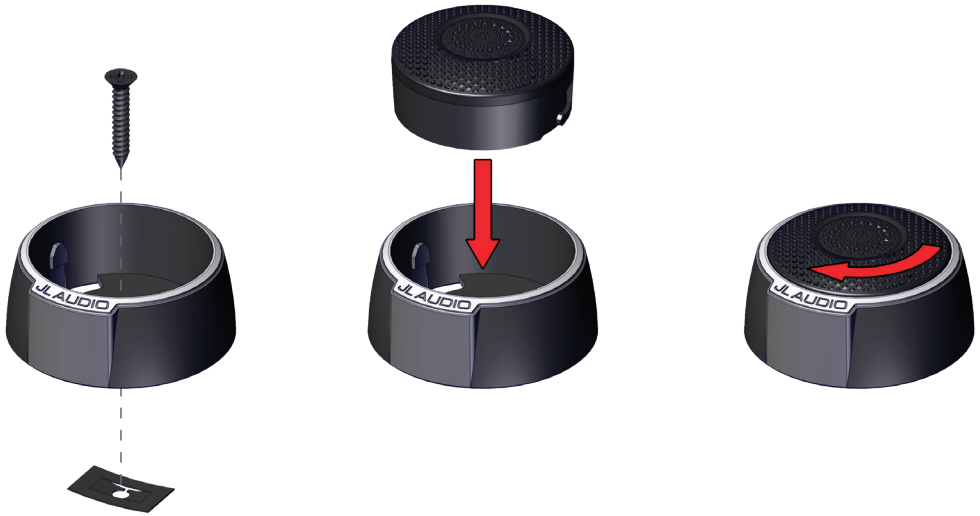
After cutting the hole, check to see that the speaker frame fits into its mounting hole cleanly. Do not force the frame into a hole that is too small. Once the speaker is in place, use the holes on the speaker's mounting flange to mark the panel where the four mounting screws will be positioned (See Diagram D). Remove the speaker and drill 1/8-inch (3 mm) holes at each mark. Connect the speaker wires, observing correct polarity, and secure the speaker and grille tray to the panel by evenly tightening by hand the provided #8 x 1.25 inch (32 mm) mounting screws. Make sure the speaker is secured so that air does not leak around the mounting flange. Air leaks will cause a severe degradation in sound quality. Seal any air leaks with an automotive-grade sealant material.

Finally, select your preferred grille style and insert it into the grille tray, pressing around its edge until seated firmly in the tray.

C7-100ct: Surface-Mount Installation

1) Remove the vehicle panel and check to ensure that the mounting screw will have adequate clearance.
2) Place the surface-mount fixture on the vehicle panel at the desired mounting location and mark the locations of the center mounting screw hole and the approximate center of the left and right semicircular cutouts (for the wires).
3) Using a 1/16-inch (1.5 mm) drill bit, drill a pilot hole through the panel at the center screw location.
4) Using a 1/4-inch (6 mm) drill bit, drill a hole for each of the tweeter's wires at the locations you marked in step 2.
5) Screw the surface-mount fixture to the vehicle panel using the supplied #8 sheet metal screw (hand-tighten) and #8 flat metal spring nut. Feed a tweeter wire through each semicircular cutout in the mounting fixture and the 1/4-inch holes you drilled in the panel.
6) To attach the tweeter to the fixture, observe the indented locking slots on the outer edge of the tweeter body and align these with the tabs visible on the inside walls of the fixture. Slide the tweeter into the fixture and secure by pressing down on the tweeter and giving it a small clockwise turn.
7) Connect the tweeter's wires to the wire leads from the amplifier, observing correct polarity. Install the protection capacitor as noted on page 5.
8) Re-install the vehicle panel, taking care to route the new wiring so as not to interfere with any vehicle mechanisms (window mechanisms, for example).

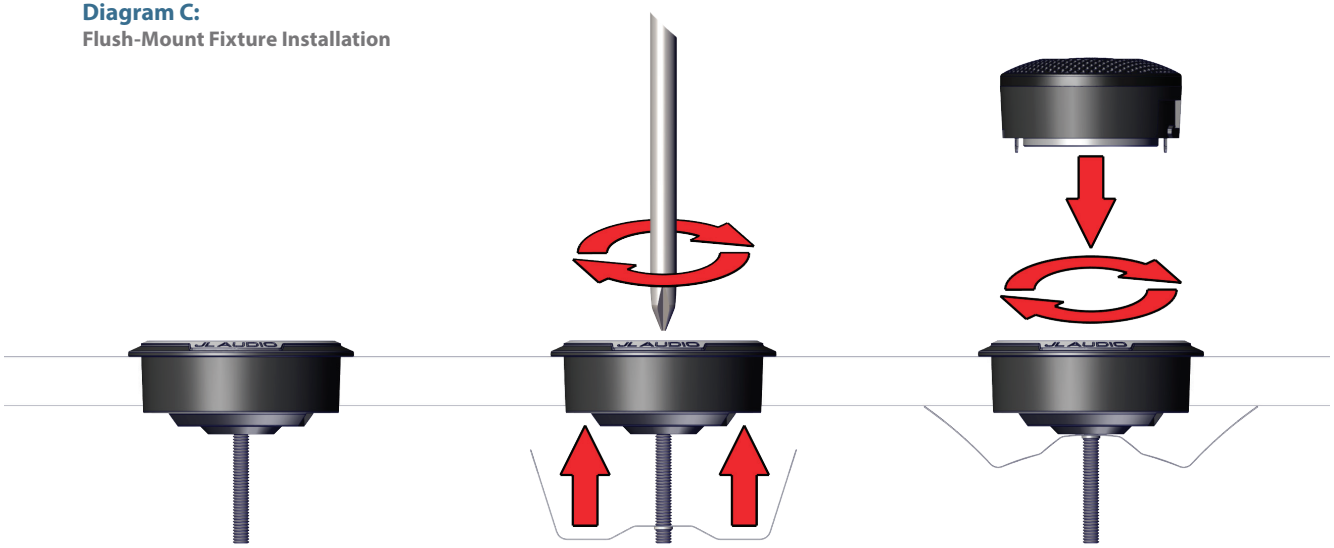
Diagram B:
Surface-Mount Fixture Installation



C7-100ct: Flush-Mount Installation

1) Remove the vehicle panel and check the desired mounting location to ensure that there is adequate clearance behind the panel for the tweeter's magnet structure and mounting hardware.
2) Carefully cut a 1.88-inch (48 mm) diameter hole in the vehicle panel. This will achieve a snug fit and allow the tweeter flange to conceal the cut line.
3) Insert the flush-mount fixture from the front of the panel and place the M4 machine screw through the center hole of the fixture.
4) From behind the panel, thread the spring clip onto the M4 machine screw and hand-tighten until the fixture is secure.
5) Feed a tweeter wire through each semicircular cutout in the fixture from the front of the panel.
6) To attach the tweeter to the fixture, observe the indented locking slots on the outer edge of the tweeter body and align these with the tabs visible on the inside walls of the fixture. Slide the tweeter into the fixture and secure by pressing down on the tweeter and giving it a small clockwise turn.
8) Connect the tweeter's wires to the wire leads from the amplifier, observing correct polarity. Install the protection capacitor as noted on page 5.
9) Re-install the vehicle panel, taking care to route the new wiring so as not to interfere with any vehicle mechanisms (window mechanisms, for example).

Diagram C:
Flush-Mount Fixture Installation



C7-350cm: Installation

Diagram C:
Factory Location Speaker Installation

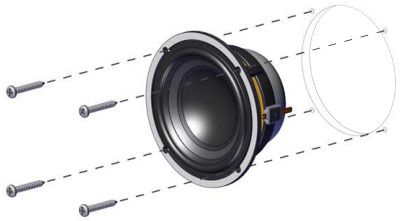


Diagram D:
Custom Location Speaker Installation

WARNING

Hand-tighten the screws evenly in a criss-cross pattern to avoid bending the speaker frame or stripping the mounting screw holes.

C7-650cw: Installation

Diagram C:
Factory Location Speaker Installation

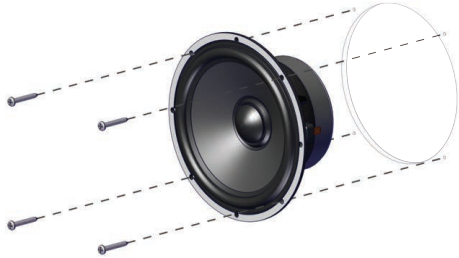


Diagram D:
Custom Location Speaker Installation

Limited Warranty

JL AUDIO warrants this speaker to be free of defects in materials and workmanship for a period of one (1) year from the original date of purchase.

This warranty is not transferrable and applies only to the original purchaser of the product from an authorized JL AUDIO dealer. Should service be necessary under this warranty for any reason due to manufacturing defect or malfunction, JL AUDIO will, at its discretion, repair or replace the defective product with new or remanufactured product at no charge.

Damage caused by the following is not covered under warranty: accident, misuse, abuse, product modification or neglect, failure to follow installation instructions, unauthorized repair attempts, misrepresentations by the seller. This warranty does not cover incidental or consequential damages and does not cover the cost of removing or reinstalling the unit(s). Cosmetic damage due to accident or normal wear and tear is not covered under warranty.

Any applicable implied warranties are limited in duration to the period of the express warranty as provided herein beginning with the date of the original purchase at retail, and no warranties, whether express or implied, shall apply to this product thereafter. Some states do not allow limitations on implied warranties, therefore these exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

If you need service on your JL AUDIO product:

All warranty returns should be sent to JL AUDIO freight prepaid through an authorized JL AUDIO dealer and must be accompanied by proof of purchase (a copy of the original sales receipt). Direct returns from consumers or non-authorized dealers will be refused unless specifically authorized by JL AUDIO with a valid return authorization number. Warranty expiration on products returned without proof of purchase will be determined from the manufacturing date code. Coverage may be invalidated as this date is previous to purchase date. Return only defective components. Non-defective items received will be returned freight-collect. The customer is responsible for shipping charges and insurance in sending the product to JL AUDIO. Freight damage on returns is not covered under warranty. Always include proof of purchase (sales receipt).

For Service Information in the U.S.A. please call:
JL Audio customer service: (954) 443-1100 during
normal business hours (Eastern Time)

JL Audio, Inc
10369 North Commerce Parkway, Miramar, FL 33025

International Warranties:
Products purchased outside the United States of America are covered only by that country's distributor and not by JL Audio, Inc.

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