



## **TR650-CSI**

6.5-inch (160 mm) 2-Way Component System

---

### owner's manual

*Thank you for choosing a JL Audio Evolution TR Component System for your automotive sound system. With proper installation, your new speakers will deliver years of listening pleasure.*

*We strongly recommend that you have your new Evolution speakers installed by your authorized JL Audio dealer. The installation professionals employed by your dealer have the necessary tools and experience to disassemble your interior panels, install your new speakers and reassemble your vehicle properly. Also, keep in mind that your warranty coverage doubles to 2 years if your system is installed by your authorized JL Audio dealer. If you prefer to perform your own installation, please read this instruction manual completely before beginning the process.*



## TR650-CSi SPECIFICATIONS:

**Woofers:** Injection-molded, mica-filled, polypropylene cone body; 1-inch (25mm) voice coil, flat-profile/symmetrical-roll spider; butyl rubber surround.

**Tweeters:** 0.50-inch (12 mm) textile dome diaphragm, integral phase plug, neodymium magnet, ferrofluid cooled and damped. Designed for flush or surface mounting.

**Crossover Design:** Natural roll-off low pass (woofer), 1st order high-pass circuit with electrolytic capacitor on tweeter. Polyswitch tweeter protection.

### Continuous Power Handling:

50 Watts (RMS Method)

### Recommended Amplifier Power:

10-75 Watts per channel (RMS Method)

**Frequency Response:** 59 Hz - 22 KHz ( $\pm 3$  dB)

**Efficiency @ 1W/1m:** 91.0 dB

**Nominal Impedance:** 4 ohms

### Included Components and Parts:

- Two TR650-CWi 6.5-inch (160 mm) Woofers
- Two TR050-CT 0.50-inch (12 mm) Tweeters
- Two TR050-CThp In-Line, High-Pass Filters on 5.3 ft. (1.6 m) Wire Harnesses
- Two Metal Spring Clips (for tweeter flush mounting)
- Two Surface-Mount Tweeter Fixtures
- Two Metal Woofer Grilles and Grille Trays
- Butyl Adhesive Putty (for woofer grilles)
- Eight #8 x 1 1/4-inch (30 mm) Sheet Metal Screws
- Four #6 x 5/8" (16 mm) Sheet Metal Screws
- Two 1/4-inch (6 mm) Machine Screws
- Eight Mounting Clips (for woofer mounting)
- Two 5.2 mm Female Crimpable Connectors
- Two 2.8 mm Female Crimpable Connectors

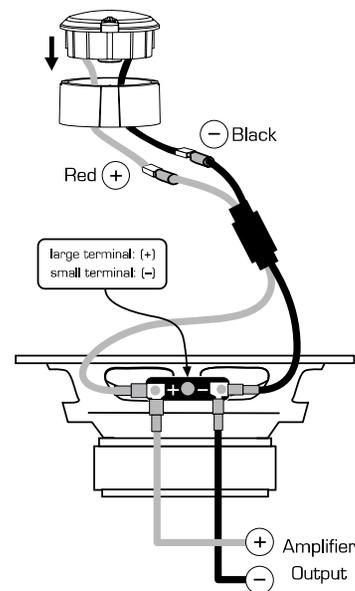
## GETTING STARTED:

- Turn off the audio system. It is also advisable to disconnect the negative (-) terminal of your vehicle's battery whenever performing installation work.
- Before cutting, drilling or inserting any screw, check clearances on both sides of the planned mounting surface. Also check for any potential obstacles, such as window tracks and motors, wiring harnesses, etc. Check both sides of the car; many cars are not symmetrical!
- Always wear protective eyewear.

## !! WARNING

It is absolutely vital that your component system is connected as shown in the diagram below. Failure to connect the system as shown will result in damage to your speakers which is NOT covered under warranty. Do not substitute different crossover networks or filters into your TR650-CSi System. Only use in-line filters clearly marked "TR050-CThp".

### A) Wiring Diagram:



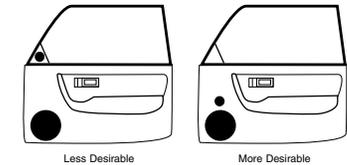
## BUILT-IN TWEETER PROTECTION CIRCUITRY:

The TR Crossover networks are equipped with an advanced electronic tweeter protection circuit designed to minimize the possibility of tweeter failure. This electronic device monitors current going to the tweeter and will disconnect the tweeter from the signal when it senses overload. Should this occur while listening to the audio system, simply reduce the volume for a few seconds and the protection circuit will reset itself automatically.

## SPEAKER PLACEMENT CONSIDERATIONS:

A component system gives you the ability to place the woofer and tweeter separately in your vehicle interior. This can be good or bad, depending on how it's done.

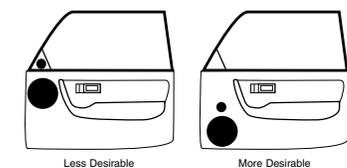
As a general rule, the tweeters should be placed relatively close to the woofers for best tonal balance and most coherent imaging (the closer, the better). Any separation greater than 8 inches (20 cm) is likely to result in degraded sound quality.



Avoid placing tweeters where they will be blocked by objects in the interior of the car (including seated occupants). When selecting a mounting location, look at both sides of the car to make sure that this location is clear on both sides.

You can always experiment with tweeter placement before committing to a final mounting location. Simply connect the rest of the system and allow plenty of wire length for the tweeters. Using velcro or similar material, attach the tweeters in different locations until you find the one where they perform best.

Woofers will usually be placed into factory speaker locations. If you have some woofer mounting flexibility, keep the following in mind: Lower mounting locations, such as the lower front corner of a door or a kick-panel provide the greatest path length distances for the sound emitted by the woofer. For this reason, they are generally more desirable than higher mounting locations. Higher mounting locations will usually result in extreme near-side soundstage bias which compromises the stereo listening experience.



## INSTALLING THE WOOFERS IN FACTORY LOCATIONS:

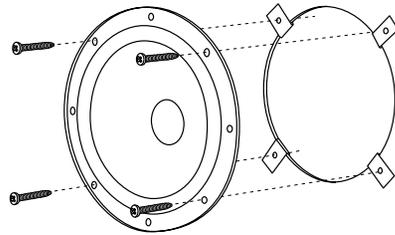
If you will be using the factory speaker wires, it may be necessary to change the terminations. This may be accomplished by using an adaptor plug or simply by cutting the factory connector off and using the supplied crimp connectors to terminate the speaker wires. The large connector is for the positive terminal and the small connector is for the negative terminal of each woofer. Make sure that you observe correct polarity in your connections. If you are unsure about any of these issues, contact your JL AUDIO dealer for installation assistance.

Your new speakers have been designed to install, without modifications, into most vehicles that accept a 6.5-inch (160 mm) speaker. Most factory 6.5-inch speakers use four mounting screws which will line up with the mounting holes on your woofers. Others use a 3-hole mounting system which is accommodated by a separate set of mounting holes on the frames of your TR650-CWi 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 surface! This will damage your speakers. The speaker should also

fit so that no air leaks around the mounting flange. Air leaks will cause a severe degradation in sound quality. Seal any air leaks with silicone, rope caulk or similar sealant material.

**Install as shown in the diagram here.**  
**Use the supplied mounting clips unless the factory holes already feature threaded inserts.**  
**Hand-tighten the screws evenly to avoid bending the speaker frame!**



## INSTALLING THE WOOFERS IN CUSTOM LOCATIONS:

Run speaker wire to the desired mounting location. 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. Then, cover the wires with a protective PVC sleeve and run them through the door jamb. Make sure that the wires will clear door hinges and other structures in the door. If you are unsure about any part of this process, please contact your JL AUDIO dealer for installation help.

**Double check the clearance for both speakers before proceeding.**

Use the supplied template on the top of the product packaging to mark the desired mounting location. Mark the center and the outline of the mounting hole as well as the mounting screw positions. Before drilling or cutting, 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 four 1/8" (3 mm) holes for the speaker's mounting screws at the positions you have marked. Also drill a pilot hole in the center of the speaker mounting hole at this time. Then, using a saber saw, hole saw or nibbler, make the circular cut out for the speaker. File any rough edges.

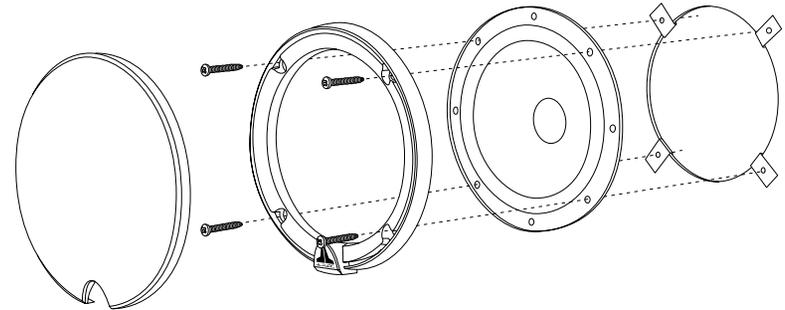
**Insert the mounting clips with the flat side towards the speaker as shown in the diagram.**

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 surface! This will damage your speakers. The speaker should also fit so that no air leaks around the mounting flange. Air leaks will cause a severe degradation in sound quality. Seal any air leaks with silicone, rope caulk or similar sealant material.

Connect the speaker wires, observing correct polarity, and install the speaker and grille tray as shown.

**Hand-tighten the screws evenly to avoid bending the speaker frame!**

Break off small pieces of the supplied butyl adhesive putty and place them on the inside of each grille tray. This adhesive will hold the grille in place firmly and prevent rattling. Then insert the metal grille into the grille tray, squeezing gently around its edge until it seats firmly into the tray.



### TWEETER INSTALLATION:

The dome tweeters supplied with your TR650-CSI system 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.

1) Flush Mounting will yield a custom-installed appearance, but will require at least 3/4-inch (19 mm) of clearance behind the mounting surface of the tweeter:

2) Surface Mounting, using the supplied surface mount kit and hardware requires the drilling of three holes (one for the wires and two for the mounting screws). This application is useful when mounting the tweeters to a panel that has insufficient clearance behind it for the tweeter's magnet structure.

### TWEETER CONNECTIONS:

Run the supplied wiring harness with the in-line filter from the extra tabs on the component woofer to the tweeter mounting location. Then connect this harness to the wires attached to the tweeters, observing correct polarity. In some cases, it may be easier to run the tweeter wires directly to the amplifier output, instead of connecting them to the component woofer terminals. This is functionally identical to the first method (it is a simple, parallel connection). See Wiring Diagram on page 2 for details.

### SURFACE MOUNT INSTALLATION:

1) Remove the vehicle panel and check to ensure that the mounting screws will have adequate clearance.

2) Place the surface-mount fixture on the vehicle panel at the desired mounting location and mark the location of the two mounting screw holes and the approximate center of one of the two rectangular cutouts (for the wires).

3) Using a 1/16-inch (1.5 mm) drill bit, drill a hole through the panel at the two screw locations.

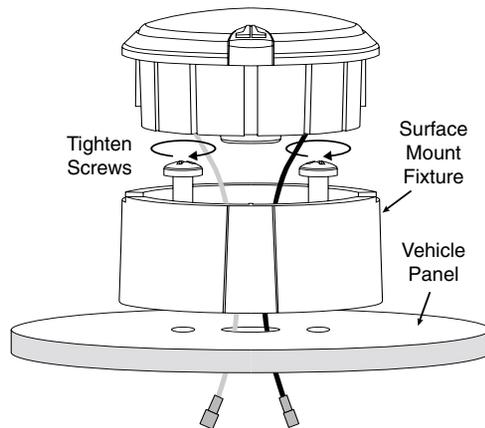
4) Using a 1/2-inch (12 mm) drill bit, drill the hole for the tweeter's wires at the location you marked in step 2.

5) Screw the surface mount fixture to the vehicle panel using the supplied #6 sheet metal screws (**hand-tighten**).

6) Feed the tweeter wires through the rectangular hole in the mounting fixture and the 1/2-inch hole you drilled in the panel. Then, snap the tweeter into the surface mount fixture.

7) Connect the tweeter's wires to the supplied harness with the in-line high-pass filter:

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).



### FLUSH MOUNT INSTALLATION:

1) Remove the vehicle panel and check to ensure that there is at least 3/4 inch (19mm) clearance behind the panel for the tweeter's magnet structure.

2) Carefully cut a 1 9/16-inch (40 mm) diameter hole in the vehicle panel. This will achieve a snug fit and allow the tweeter flange to conceal the cut line.

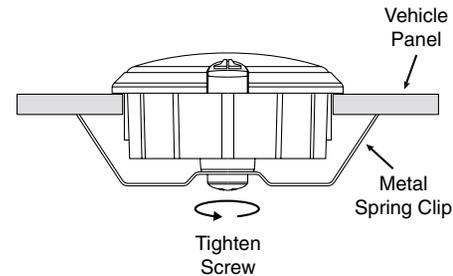
3) Insert the tweeter from the front of the panel (do not attach the spring clip at this time).

4) Attach the spring clip from behind the panel using the supplied 1/4 inch (6 mm) machine screw.

5) Tighten the screw by hand until the tweeter is tight on the panel. Do not overtighten.

6) Connect the tweeter's wires to the supplied harness with the in-line high-pass filter:

7) 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).



## **JL AUDIO LIMITED WARRANTY (USA)**

### **Evolution Speaker Systems**

JL AUDIO warrants these speakers (and crossover networks, where applicable) to be free of defects in materials and workmanship for a period of **ninety (90) days** from the original date of purchase. The warranty term is extended to **one (1) year** if installation is performed or approved by an authorized JL AUDIO dealer (proof of installation or approval required on purchase receipt).

This warranty is not transferrable and applies only to the original purchaser 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. If one speaker fails in a system, return only that speaker component, not the entire system. Non-defective items received will be returned freight-collect. Customer is responsible for shipping charges and insurance in sending the product to JL AUDIO. Freight damage on returns is not covered under warranty.

### **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 Pkwy.  
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.