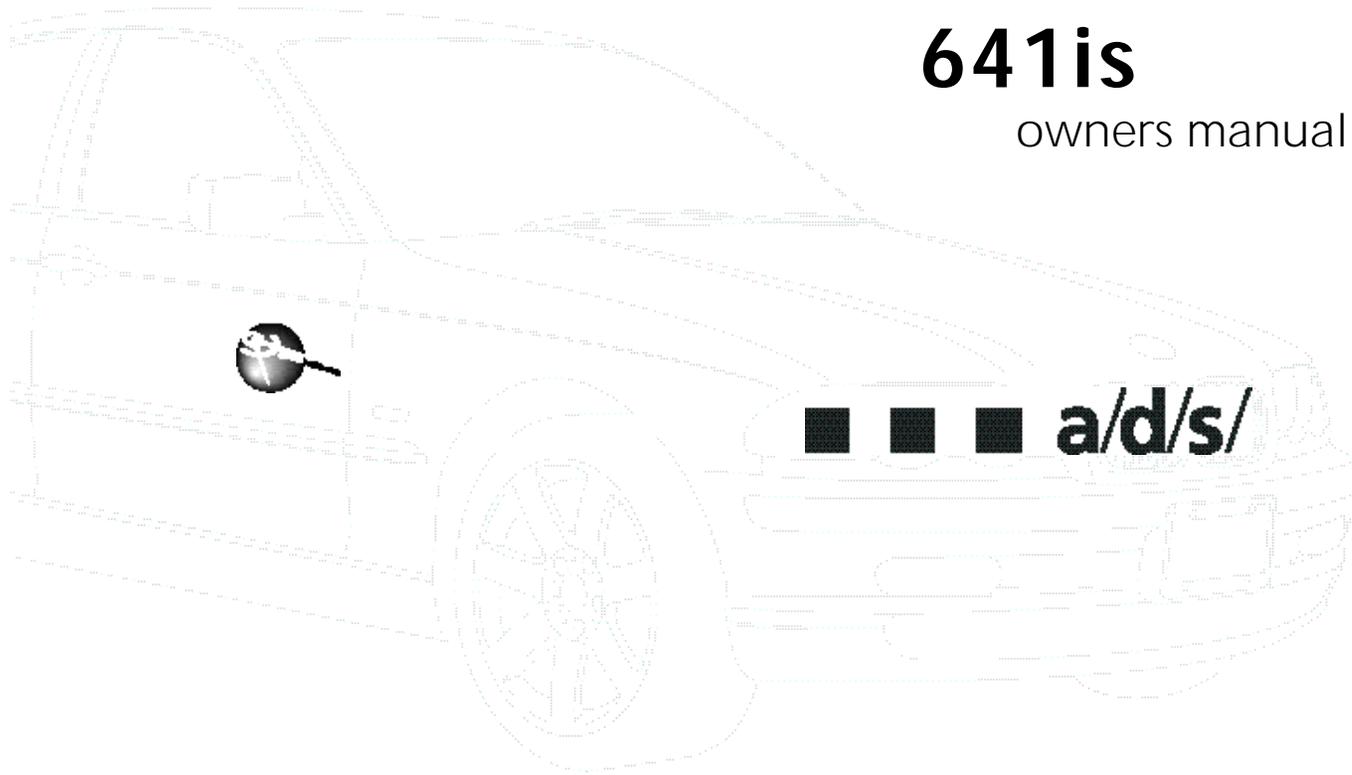


641is

owners manual



■ ■ ■ a/d/s/

■ ■ ■ a/d/s/

manufacturer's name: analog and digital systems, inc
manufacturer's address: 9235 south mckemy street
 tempe arizona 85284
 usa

areas that the product:

product name: 641is

forms to the following standards:

EN 50 081-1/1992
 EN 50 082-1/3.1995

european contact:

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introduction

Thank you for choosing this a/d/s/ component automotive loudspeaker. Your new loudspeaker system is the latest innovation in reference quality automotive loudspeakers. Its unique combination of high technology design and real-world convenience features make it the ideal addition to any quality music system. a/d/s/ takes great pride in manufacturing products that truly stand the test of time, from their renowned mini-speakers to whole house systems of the grandest proportion. With a minimum of care, this a/d/s/ product will provide years of trouble-free satisfaction. Keep this manual in a safe place, it's likely you will use it again & again!

about this manual

To get the most from your a/d/s/ 6-series loudspeaker, we recommend that you read this manual thoroughly before using. If there is anything that you do not fully understand, please consult with your a/d/s/ dealer before attempting the installation.

ed woofer basket - the back bone of any good woofer is it's basket. It provides the proper align- and support structure for the magnet while the very thin braces guarantee a minimum of early tions off the basket that would be ordinarily transmitted as sonic colorations through the cone.

ter level control - a three position control adjusts the volume of the tweeter with respect to the nge.

-mount tweeter - all of the tweeter mounting options (surface, flush, or angled flush) are sup- with the 6 series systems to mount the high quality ferrofluid cooled neodymium tweeter.

ormal tweeter grille - the tweeter grille conforms to the exact shape of the dome over it's entire e radiating area to assure that it is truly transparent at all listening angles, not just directly on axis.

mplifiable / tri-wireable - the passive crossover supplied with this system is tri-amplifiable or tri- ble: typically only available in high quality audiophile home loudspeakers.

state tweeter protection - advanced protection circuitry provides protection for the tweeter st overpowering or amplifier clipping.

te III woofer cone - mineral enhanced copolymer which is injection molded to provide the ideal ce of mass to stiffness.

sd voice coil - magnet structure cooling vent enhances power handling capabilities of the woofer.

ded center pole - woofer magnet geometry provides a symmetrical magnetic pattern to reduce THD.

here are two things you must do to ensure trouble free service in the event you need warranty repairs.

- 1 - Keep your original sales receipt in a safe place. A copy of the receipt will be required to obtain warranty service.
- 2 - Be sure your retail dealer has written the date, the model number, and the serial number (if applicable) of the Product on the receipt.

To give yourself an extra measure of protection, make a separate record of the information about your purchase and keep it in a safe place. In the event you misplace the sales receipt, your dealer may be able to give you a copy.

Take a moment now to read the terms of your warranty. Check to be sure your sales receipt is dated and has the Product model number and serial number (if applicable) on it. Then put it away in a safe place.

When shipping a Product in for service:

- Enclose a copy of your original sales receipt that has the date, the Product model number and serial number (if applicable) written on it.
- Always ship Products in the complete original packing material.
- Avoid shipping Products via the Postal service. If you must use the Postal service, be sure to register and insure the package.

a/d/s/ Limited Warranty

Analog and Digital Systems, Inc. (a/d/s/) warrants to the original consumer purchaser of the a/d/s/ Products described in this manual, that the Product will be free from defects in materials and workmanship for a period of one (1) year after the date of purchase. If the product is installed by an authorized a/d/s/ retail dealer, the warranty is extended to three (3) years, a/d/s/' sole obligation under this warranty shall be to provide, without charge, parts and labor necessary to remedy the defects, if any, that appear during the warranty period.

This warranty is the sole and exclusive express warranty given with respect to the Product. All other express warranties are hereby excluded. Neither a/d/s/ nor the authorized dealer who sells the Product is responsible for indirect, incidental, or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion 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.

IMPORTANT - Keep your original sales receipt. Be sure the retail dealer has written on it the date, model number, and serial number (if applicable) of the Product. This information is required for warranty service.

This warranty is limited to:

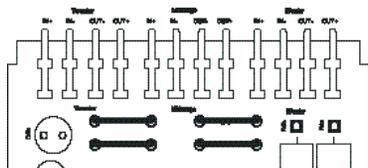
- Products purchased from authorized a/d/s/ retail dealers in the United States. a/d/s/ will supply a list of authorized dealers on request.
- In order to obtain warranty service you must:
 - Return the Product, freight prepaid, to the a/d/s/ dealer from which it was purchased. If necessary you may call a/d/s/ Customer Service Department for the names and addresses of authorized dealers in your area.
 - Provide proof of purchase in the form of a copy of your original sales receipt. The date, model number, and serial number (if applicable) of the Product must be written on the sales receipt.

This warranty does not cover:

- Damage that is the result of misuse, abuse, accident (including but not limited to damage by water), faulty hookup, defective or maladjusted associated equipment, or the use of the Product with equipment for which it was not intended.
- Cosmetic defects that appear more than thirty (30) days after the date of purchase. Cosmetic damage caused by improper handling is also excluded.
- Products that are used for commercial purposes.
- The cost of removing or reinstalling the Product.
- Damage that occurs while the Product is being shipped to whoever will service it. See the information above regarding shipping procedures.

This warranty is void if:

- The Product identification or serial number label is removed or defaced in any way.
- The Product is serviced or repaired by any one other than a/d/s/ or an authorized a/d/s/ dealer.



Specifications

frequency response +/-3dB:	system 40Hz to 22kHz	
sensitivity 2.83 volt 1m:	91dB	
impedance, nominal:	4 Ohms	
recommended amplifier power watts RMS:	20 to150 watts per channel	
speakers – woofer/midrange transducer	mid-range	woofer
mounting depth (woofer):	2 3/8" / 60mm	2 7/16" / 63mm
height:	2 11/16" / 69mm	2 15/16" / 79mm
maximum diameter:	6" / 152mm	6 1/2" / 165mm
mounting height above panel without grille:	1/2" / 13mm	5/8" / 16mm
mounting height above panel with grille:	3/4" / 20mm	15/16" / 24mm
mounting grille diameter:	6 1/2" / 166mm	7 1/8" / 181mm
size:	4 5/8" / 118mm	4 15/16" / 125mm
speakers – tweeter transducer		
mounting depth:	1 1/4" / 32mm	1 1/4" / 32mm
mounting cutout diameter:	1 7/8" / 48mm	1 7/8" / 48mm
mounting depth:	1" / 26mm	1" / 26mm
speakers – crossover network		
width/height:	10 1/16" x 3 1/2" x 1 5/8"	259mm x 89mm x 42mm
frequency points:	low to mid 200Hz	Mid to tweeter 2.2k
Small specifications		
resonance (Fs):	57.2Hz	57.1Hz
total damping (Qes):	.34	.47
mechanical damping (Qms):	4.87	6.00
impedance (Qt):	.32	.44
compliance volume (Vas) cubic feet / liters:	0.26 / 7.41	0.46 / 13.0
effective cone area (Sd) in ² :	14.1	18.9
excursion to peak linear excursion (Xmax):	.16" / 4.0mm	.16" / 4.0mm
total peak excursion:	1/2" / 12.7mm	3/4" / 19.0mm
coil DC resistance (Re):	3.1	3.1
coil diameter:	1" / 25.4mm	1" / 25.4mm
coil length (winding length):	.45" / 11.5mm	.45" / 11.5mm

a/d/s/ subscribes to the philosophy of continuous product development therefore the specifications may change without notice.

a/d/s/ tweeters are constructed in concert with the Ferrofluid program and use Ferrofluid to provide increased power handling, decreased distortion, minimum electrical impedance change, higher linearity, and smoother frequency response.



Study your automobile thoroughly before you drill or cut any holes. Take extra care when working near gas tanks, gas lines, brake or hydraulic lines and electrical wiring.

Wear eye and ear protection when using power tools.

Keep the woofers and tweeters away from metal filings and shavings. Once foreign objects are stuck to the magnets or tweeter dome, it will be virtually impossible to remove them. Keep the tweeters in their protective bags until final mounting to prevent any possibility of metal dust or chips from passing through the grille and accumulating on the dome.

Exercise caution when working with the 6-series with the grille removed. A slip of the hand with a screwdriver or other tool can result in irreparable damage to the cone or dome. Do not touch the cone or dome.

Do not install the components where they will be subject to excessive heat, moisture or dust; or where they will be kicked or repeatedly bumped or brushed.

Make absolutely sure that the woofer is connected to the lowpass output and the tweeter is connected to the highpass output of the crossover network. If these connections are reversed, low-frequency signals will be fed to the tweeter without fuse protection. In this case, the tweeter may be damaged. Such damage is not covered by the warranty.

When removing or installing the grille on the 6-series, be careful not to brush the woofer's rubber surround or the tweeter's dome with the edge of the grille. Cutting or tearing the surround or dome will destroy the unit.

Never run wires outside or beneath the vehicle where they can be snagged by road hazards or the moving parts of the vehicle. Use existing wire channels, sills, panels and molding strips inside the automobile to hide the wiring for neat appearance and safety.

Make sure your radio/cassette/cd player and or other equipment is turned off while connecting the 6-series speaker terminals. Turn on the various components and slowly advance the volume control only after checking and double checking all connections

Note: if sound is weak or distorted, immediately turn down the volume and see the section entitled troubleshooting.

system planning

Proper system planning is the best way to maximize performance. By planning your installation carefully you can avoid situations where the performance or reliability of your system is compromised. Your authorized a/d/s/ dealer has been trained to know how to maximize your systems sonic potential. They are a valuable resource in helping you with your system design and installation.



Warning on power handling

6-series speaker system requires a minimum of 20 Watts per channel to achieve reasonable listening volumes in a moving automobile without clipping the amplifier. a/d/s/ recommends 150 Watts per channel as a maximum so as not to exceed the thermal or mechanical limitations of the speaker system. Any amplifier between 20 watts and 100 watts per channel may be used. If you choose to use an amplifier with more power than 100 Watts be very careful, you can damage the speaker system if it is too loud.

6-series loudspeakers will produce reasonable volume levels in the automotive environment using moderate amplifier power. However, the use of a low powered amplifier to try and attain very high volume can lead to overdriving the amplifier. This will generate high distortion levels which can easily damage loudspeakers, even when the amplifier's rated power is far below the maximum rated power of the loudspeaker.

Therefore, do not turn the volume up above the point where you hear distortion on musical peaks from an overdriven amplifier or mechanical noise from an overstressed speaker. For the best performance and reliability, select an amplifier with slightly more than the maximum power you are likely to generate at the desired volume levels. This margin of reserve power will ensure that the amplifier does not attempt to deliver more than its design allows.

Warning: Excessive sound pressure level can permanently damage your hearing. The maximum volume levels attainable with a/d/s/ speakers, combined with high-power amplification, may exceed safe levels for extended listening. When listening at high volume levels always use hearing protection or turn it down!

Mounting locations

There are many possible choices of mounting locations. The automobile factory locations will usually place the woofer mounting position. Because of its small size and multiple mounting options, the tweeter can virtually go anywhere. a/d/s/ uses an unusually low crossover frequency for the tweeter which means you are not restricted to mounting the tweeter close to the midrange. The tweeter can be mounted as far as 6" from the midrange without causing adverse effects on the sound quality.

We cannot recommend specific locations for the tweeter for each car, but we can give some general guidelines. Try to keep the tweeters as far to the sides of the car as practical, avoid placing them above ear level unless the woofers are also above ear level. Place the tweeters in similar locations on both sides. A few locations by just placing the tweeter or taping it in a location and listening to ensure the desired stereo image and high frequency dispersion are achieved before committing to a location by drilling holes in the automobile.

Volume controls and connections

Volume level control

The volume position switch in the crossover box labeled low mid high adjusts the relative volume of the tweeter with respect to the midrange. The mid position is referenced as equal output from the tweeter and midrange. The hi position offers 3dB more output from the tweeter. The low position is 3dB less output. Adjust this control to your listening preference.

symptom	probable cause	remedy
no output	source or amplifier not turned on	check source or amplifier and fix as needed
	audio input not connected or no integrity, fix or replace as needed	check RCA connections and signal
	protection circuit activated	turn down volume. Protection will self reset
output from source	speaker wires not connected	check speaker wires and fix or replace as needed
	audio cycles on and off	speaker damaged
distorted output	thermal protection engaged	check that amplifier has adequate ventilation, check speaker impedance load
	Loose or poor audio input	check RCA, power and speaker connections and fix or replace as needed
	preamp volume set too high, exceeding maximum input capability of amplifier	check volume of preamp and adjust appropriately.
poor bass response	Impedance load to amplifier too low	check speaker impedance load, if 1 ohm rewire the speakers to achieve a higher impedance
	shorted speaker wires	check speaker wire connections and repair or replace as needed
	speaker not connected properly	check speaker wiring and fix or replace as needed, refer to the speaker wiring section of this manual for detailed instructions
lack of stereo separation	speaker damaged	check system with known working speaker and fix or replace as needed
	speakers wired with wrong polarity causing cancellation at low frequencies	check speaker polarity and fix as needed
	speakers wired with wrong polarity.	check speaker polarity and fix as needed
no stereo	stereo / bridge switch set to bridge position speaker connected across wrong output terminals	set switch to stereo position check that the speaker wires are not connected to the bridged terminals and fix as needed
	source set to mono	check source and adjust controls as needed

Refer to the tweeter to the terminals marked high input. Connect the woofer amplifier to the low terminals with another run of wire.

Important note - you must cut the jumpers that connect the low frequency and mid frequency sections of the crossover. See diagram 3. Failing to cut these jumpers could cause damage to the amplifiers or crossover.

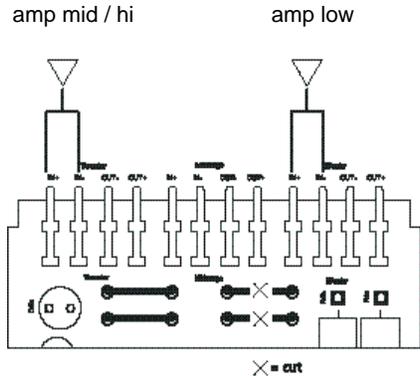


diagram 3

Insert about 1/4" from the end and insert into the connector input + and - positions and tighten the set screws. Strip the wire from the woofer and insert into the + and - positions for the crossover woofer output. Follow the same procedure for the connection to the tweeter. The 6-series passive crossover has three sets of input terminals, this allows the system to be tri-wired or tri-amplified. If you select to use one of these wiring schemes you must cut the jumpers in the crossover to electrically separate the high-pass and low-pass sections (see diagram on page 14 for location of jumpers).

To tri-amplify the system you will need three stereo amplifiers (or six amplifier channels) one for the tweeters, one for the midrange and one for the woofers.

If you choose to bi-wire the system, connect the high-pass terminals to the amplifier and connect the low-pass terminals to the same amplifier with another set of speaker wires.

Be sure to connect the positive crossover terminals to the positive speaker terminals and positive amplifier terminals, also ensure that the negative crossover terminals connect to the negative amplifier and speaker terminals.

Once all of the wires are attached to the connector and the crossover is mounted, the connector can be plugged into its mating receptacle on the crossover.

speaker wiring

speaker wire selection

Use insulated two-conductor stranded wire to connect the 6-series crossover to the speakers and amplifier. The size of the wire can have an audible effect on the performance of the system. Standard 18 gauge "zip cord" will work, but can result in lower output or unpredictable frequency response. For wire runs of 50 feet or less, we recommend 16 gauge or larger wire. The crossover connector will accept up to 14 gauge wire.

polarity and phasing

The polarity - the positive / negative orientation of the connections - for every speaker and amplifier connection must be consistent so all the speakers will be in phase. When the polarity of one connection is reversed, bass output is reduced and stereo imaging is degraded. All wire is marked so you can identify the two conductors. There may be ribs or a stripe on the insulation of one conductor. Or the wire may have clear insulation with different color conductors (copper and silver). Or there may be polarity indications printed on the insulation. Identify the positive and negative conductors and be consistent with every speaker and amplifier connection.

Wires to attach wires to the woofer.

Tweeter is terminated with bare wire. Use insulated butt connectors, bullet connectors, or quick disconnects to extend the tweeter wires to the crossover location. Alternatively you may solder all cones and insulate them with high quality heatshrink tubing.

Speaker mounting

Woofer installation

6-series woofer will fit into standard factory mounting locations using the existing mounting holes in an automobile. The woofer uses .187 spade type terminals for electrical connections.

To connect the woofer, use .187 or .205 female quick disconnects of a size appropriate for the wire gauge you chose. You may also solder wire directly to the terminals. If you choose to solder the wires, be careful not to use excessive heat so you do not melt the plastic around the terminal, which is not covered by the warranty.

Remove the trim panels and inspect the installation locations before you cut and drill the holes required to mount the woofer. Removing the panel will also make it much easier to route wiring inside the door. For original equipment speaker installation cutouts that can be used to install the 6-series woofers with little or no modifications. Use the template supplied to help you locate and mark the holes needed to install the speakers.

The planned installation location is in a door panel be sure the speaker will not interfere with the windowing mechanism. Be sure that the speaker wires clear all moving parts inside the door.

For each woofer you will need to cut one large hole and drill small holes around the circumference. If the mounting surface is covered by carpet or fabric, use a knife or razor to cut the material away from the holes and cutting path. This prevents material or fibers from becoming tangled in the drill bit or cut-blade.

When using the sheet metal screws provided in the hardware kit, drill the four speaker mounting holes with a 1/8" / 3mm drill.

Clean the work areas of all filings and shavings with a vacuum cleaner before you proceed with woofer mounting.

Woofer mounting

Route the speaker wire from the woofer installation locations to the crossovers. Pull the wire through the installation hole and attach the terminals on the ends to terminals on the speakers. Connect the tweeter wire to the positive (+) terminal, which is indicated by a "+" on the speaker magnet. See the location in the speaker wiring section of this manual and the wiring diagrams. Push the wire back behind the installation location and be sure it will not interfere with the speaker.

Apply the supplied foam gasket strip to the mounting surface of the speaker. This will ensure an air seal, which is required to achieve the best bass performance.

When installing the speakers drive the supplied sheet metal screws by gradually tightening them in turn. Tighten the screws in until the speaker is well seated, but take care not to over-tighten the screws.

The 6-series woofers is installed in a slightly different way. See the following illustrations.

amplifier (or, if you are not using a separate power amplifier, the Hi-Pass output of the CD player). Connect the wires to the amplifier outputs as recommended by the manufacturer of the unit. Make sure there are no stray strands of wire which could cause a short circuit. Observe left / right and polarity markings. See diagram 1.

Note: One x-over per channel

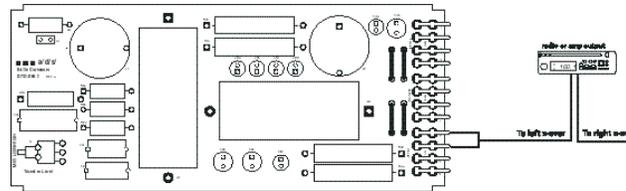


diagram 1

Tri-amplified connections to the crossover network

Connections to the woofer and tweeter are the same as the normal wiring method. Connect the amplifier you have chosen for the tweeter to the terminals marked high input. Connect the woofer amplifier to the low input terminals.

Important note - you must cut the jumpers that connect the low frequency and high frequency sections of the crossover. See diagram 2. Failing to cut these jumpers could cause damage to the amplifiers or the crossover.

Note: Must cut all jumpers

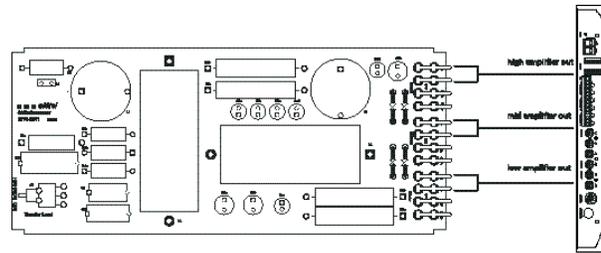


diagram 2

iring / tri-amping

-series allows conventional wiring, tri-wiring, or tri-amping using the supplied passive crossovers. conventional wiring will provide excellent sound, tri-wiring or tri-amping will further enhance the mance in no-compromise systems.

ing uses three pairs of speaker wires for the high frequency and low frequency signal between an fier channel and its associated crossover network. This gives you the option of choosing wire i may have slightly different sonic characteristics in order to optimize performance of each fre- y range. Also, it reduces the overall wiring resistance between the crossover and amplifier, much te use of larger gauge wire. This option provides the most benefit when the crossover network is ted a long distance away from the amplifier. If the crossover is mounted close to the amplifier it btful that there will be an appreciable difference between tri-wiring and conventional wiring.

ping is similar to tri-wiring except that it uses a separate amplifier channel for the high-frequen- J low-frequency sections, instead of the single amplifier channel used in conventional and bi-wired ctions. tri-amping provides the additional advantages of reducing amplifier distortion and allow- e amplifier's level controls to provide an additional level of fine-tuning not possible with the tweeter amplifier clipping, which is most likely to occur on channels driving the midrange, due to the high- rgy levels of midrange signals.

ully route the wires from the 6-series tweeter and woofer to the crossover mounting location. The ver installation location should be reasonably accessible to allow easy connection of the wires, er level adjustment and midrange contour selection. If the crossover must be mounted in an inac- le location make the speaker wire connections and adjustments before final installation. Be sure stallation location has adequate clearance to allow the removal and replacement of the cover.

iting the crossover requires removing the top cover of it's housing. Grasp the top cover at the front ack. Compress the cover slightly and lift it off the bottom of the housing.

iting the crossover requires four holes in a rectangular pattern 2 13/16" x 9 1/2" on a flat surface. re provided template as a guide for drilling the mounting holes.

the mounting holes in the bottom half of the crossover unit with the holes you have drilled at the ation site. Pass the four #6 x 1 1/4" screws through the holes in the crossover unit, and tighten until the assembly is firmly in place. As before, do not over-tighten; this is especially important if ounting surface is not perfectly flat.

all the connections and any necessary adjustments have been made snap the cover back in place.

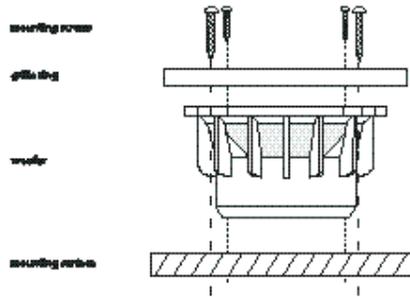
ecting the system

he speaker wire as needed. Strip about no more than 1/4" (6mm) of the insulation from the ends. he exposed strands thoroughly to prevent any loose strands from causing a short circuit. If pos- "tin" the wire with a soldering iron. The wires attach to a removable connector strip, in it's ted position the screws face the bottom of the crossover.

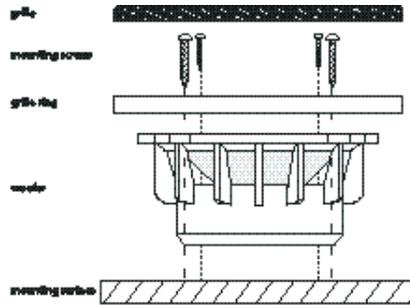
the prepared wire into the appropriate location (see diagram 10 or refer to the crossover circuit) in the connector strip and tighten the screws to secure the wires in place.

the polarity marking on the crossover circuit board.

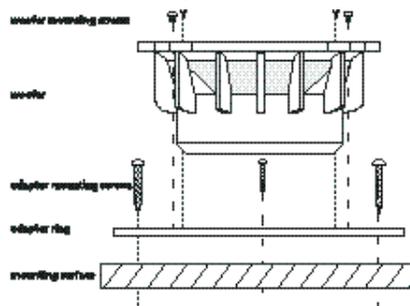
mid's



woofer mounted in standard 25.9 or 4 hole 15.5" mounting hole



woofer mounted in standard 25.9 or 4 hole 15.5" mounting hole



■ ■ ■ a/d/s/

■ ■ ■ a/d/s/

-series speaker system is supplied with three different tweeter mounting options. Surface, flush mount, and angled flush mount. After you have decided which option is best suited to your installation, refer to the following sections for specific details on mounting the tweeter.

Surface mount

Preparation of the mounting surface for the tweeter involves drilling three holes. Two holes are for mounting screws. Their centers must be spaced 15/16" / 24mm apart. Use a 1/8" / 3mm drill bit for the first two holes. The third hole is 1/4" / 7mm hole is required for the signal wire to pass through.

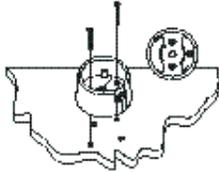
Use the template provided to locate the hole centers. Cut carpeting or fabric away from the hole location to prevent tangling of fibers in the drill bit.

Note: the orientation of the three holes determines the installed position of the tweeter.

The a/d/s/ nameplate on the surface mount cup will end up closest to the wiring hole as shown.

Surface mount cup mounting

Use two #6 X 3/4" flat head sheet metal screws through the holes in the bottom of the surface mount cup. Screw them into the mounting surface. Be sure the mounting screws are driven straight in, so the heads sit flush on the cup mounting surface. This ensures the tweeter will seat properly in the surface mount cup.



Flush mount

Check the intended installation site to be sure that there is sufficient depth behind the mounting surface for the rear mounting screws. The minimum depth required behind the back of the mounting surface is 1" / 25mm.

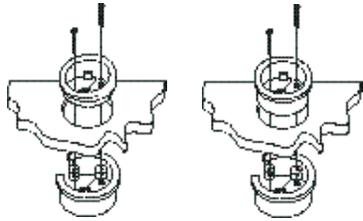
The flush mount cup mounts into the mounting surface through a 1 7/8" / 48mm diameter hole. Be careful the hole does not exceed 2 1/8" / 55mm diameter at any point so that the rim of the cup will completely cover the edge of the hole.

Use the template provided to locate the hole centers. Cut carpeting or fabric away from the cutting area to prevent tangling of fibers in the saw blade.

Place enough washers over the protruding screws on the back of the front cup so that their combined thickness is somewhat less than the thickness of the mounting surface. This will insure adequate "hinging" of the mounting cups without danger of breaking the rear cup.

Flush mount and angled flush mount cup mounting

Use two #6 X 3/4" flat head sheet metal screws through the holes in the bottom of the flush mount cup. Fold the back the cup in place behind the panel and screw the front into the back cup. Use care not to over-tighten the screws. Be sure the mounting screws are driven in straight, so the heads sit flush on the cup mounting surface. This ensures the tweeter will seat properly in the flush mount cup.



■ ■ ■ a/d/s/

It may be necessary to give some thought to the electrical connections. You may be able to fish the tweeter signal wire to the crossover network location after installation of the tweeter assembly. You may need to fish a signal wire from the crossover network location to, and then through, the mounting hole and the rear cup before the cup is inserted through the mounting hole. You can then connect the signal wire to the tweeter wire.

Once you have decided the signal wire connections, pass one supplied #6 x 1 1/2" long screw through the slotted hole in the front cup and turn a couple of threads into the rear cup. This will allow enough mobility of the two cups to allow the rear cup to be inserted through the mounting hole. The two cups can be screwed together using the long screw and a second #6 x 3/4" through the remaining hole to pinch the mounting surface between them.

Tweeter mounting

Route speaker wire from the crossover locations to the tweeter locations. Pull the wire through the wire hole and attach crossover wires to the wires from the tweeters. Connect the positive wire to the positive (+) terminal on the tweeter, which is marked with a red wire. See the information in the speaker wiring section of this manual and the wiring diagrams. Push the wire back into the area behind the installation location and be sure it will not interfere with the speaker or with anything behind the mounting panel.

To attach the tweeter to the surface or flush mount cup, align the tabs in the mounting cup with the relieved areas in the tweeter module. The wires should line up just to the right side of where the a/d/s/ nameplate is located on the surface mount cup.

Note: once the surface mount cup is attached to the mounting surface, there is only one position in which the tweeter can be properly seated into the surface mount cup.

Gently push the tweeter into the mounting cup, take up the slack in the wire, and twist clockwise until it moves no further. Do not force the unit if it does not turn freely. If the tweeter is not lined up properly with the tabs or the wire is interfering, the tweeter will not fully seat into the cup.

To remove the tweeter, simply turn it counter-clockwise, and pull the tweeter away from the cup.

■ ■ ■ a/d/s/

