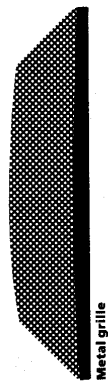
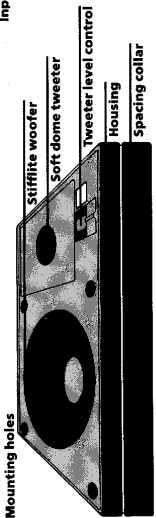


Input terminals



Metal grille



Mounting holes

Stiffite woofer

Soft dome tweeter

Tweeter level control

Housing

Spacing collar

300i

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Thank you for purchasing the ADS 300i automotive loudspeaker system. ADS' automotive loudspeaker systems and electronics have proven that state of the art high fidelity sound reproduction in the automotive environment is not only possible, but is highly enjoyable. The ADS 300i's award-winning design and engineering has established the standard of excellence for automotive loudspeaker systems.

The benefits of ADS' superb loudspeaker technology are present in full measure in the 300i. The soft-dome tweeter offers wide, smooth frequency response, unequalled transient response and freedom from coloration. The Stiffline® woofer provides deep bass response and outstanding dynamic range, while the advanced crossover network provides seamless coupling of the woofer and tweeter without

distortion. The advanced glass-filled housing provides durability and long lasting good looks. The ADS 300i incorporates many features which simplify installation and use, but optimum performance can only be obtained through careful planning and execution of the installation. This manual covers the details of installation to assist you in obtaining optimum performance. Whether or not you intend to install the 300i yourself, we urge you to read this manual thoroughly.

We suggest you save this manual and the packing materials for future use.

Thank you.

ADS, Analog & Digital Systems, Inc.

ADS soft-dome tweeter has exceptional linearity, efficiency and sonic purity resulting from a powerful Barium-Ferrite magnet assembly, an ADS high density voice coil, very low moving mass and a proprietary inside-damped dome. The new inside-damping of the dome results in a matte finish of the dome surface which does not retain dust or dirt.

ADS Striflite® woofer incorporates a powerful, precision-ground Barium-Ferrite ring magnet and a specially treated, tapered **Striflite** diaphragm, which has superb acoustic properties and is highly water resistant. The butyl rubber surround provides outstanding control of the diaphragm excursion and long life.

Tweeter level control provides three levels of tweeter output for matching to different automotive interiors, mounting locations and personal tastes. The top position, closest to the ADS logo, provides the most output, while the bottom position provides the least.

Tweeter protection fuse provides protection from amplifier faults and excessive power. The 1.5 A quick-acting fuse is mounted in clips under the fuse cover, with a plastic pull tab for easy removal.

Spare fuse is mounted in the fuse cover, which is removed by pulling straight out from the 300i housing.

Input terminals are color coded, push-types for easy and secure connection of the speaker wire.

Crossover network is mounted on a high quality circuit board, using precision components for low-loss, low-distortion matching of the drive units.

Metal grille provides excellent protection for the woofer and tweeter, and is removable for access to the tweeter level control and tweeter protection fuse.

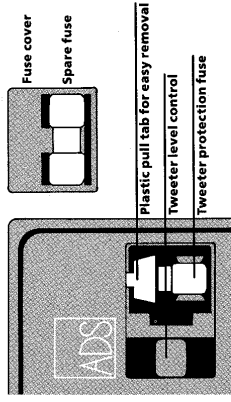
Housing is precision molded to provide secure mounting of the 300i component parts.

Mounting holes accept the mounting screws provided with the 300i.

Spacing collar is used for normal flush mounting of the 300i or can be removed for super-flush mounting with the AK-300i-2.

Hardware kit supplied with the 300i contains:

- 8 each #8 x 1 3/4 sheet metal screws
- 8 each #8 Tinnerman nuts
- 8 each #8-32 x 2 1/2 machine screws
- 8 each 1/4" hex-5/8 standoffs
- 8 each #8 x 1/8 washers
- 8 each #8-32 Keps nuts
- 1 each mounting template



2. Warnings

Study the layout of 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.**

Keep the 300i 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 300i in its plastic bag 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 300i 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.

When removing or installing the grille on the 300i, be careful not to brush the woofer's rubber surround, the tweeter dome or the small dome wires with the edge of the grille. Cutting or tearing the surround or dome will destroy the unit.

Never run wiring outside or beneath the vehicle where it 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 player and/or other equipment is turned off while connecting to the 300i speaker terminals. Turn on the various components and slowly advance the volume control **only** after checking and double checking all connections.

If you need to replace the 300i tweeter protection fuse, replace it only with a fuse identical to that supplied with the 300i. Use of a different type or rating fuse may result in damage to the 300i which is not covered by the warranty.

3. Associated equipment

There are many automotive audio products available today. Naturally, your ADS 300i should be used with only the finest car stereo components. Although the 300i will work well with many different types of signal sources and amplifiers, the final result depends on your choice of equipment.

Your ADS dealer can help you select components to complement the high performance of the 300i. ADS automotive amplifiers are particularly well suited for use with the 300i, thanks to their clean, stable power output, low distortion and wide dynamic range. Consult your ADS dealer for information.

Who should do the installation? Installing an automotive audio system is no trivial matter. Although the ADS 300i is easier to install than many automotive speaker systems, proper installation requires tools and a certain amount of skill. The quality of the installation will affect the system's performance and reliability, not to mention appearance.

When you consider that you will be making possibly irreversible modifications to your automobile, you may well decide to seek professional installation services. The dealer from whom you purchase your 300i may provide such services or will be able to recommend a professional installer in your area. A professional installation can reduce the risk of damage to either your car or your audio components.

There is, nevertheless, a great deal of personal satisfaction and pride to be gained from performing your own installation. If you decide to install the 300i yourself, you will find the following a valuable guide. We suggest you begin by carefully planning your installation.

Planning the installation Check the clearances at the mounting location you intend to use. Be sure that there is adequate space above the 300i for tightening the mounting screws, especially when using the rear deck for mounting. Be sure that there is sufficient space below the 300i for clearance for the woofer magnet.

Look for windows, trunk lid springs, window cranks, rolled-down glass position, shock struts, gas lines, wiring or anything else which may be cut inadvertently or obstruct the mounting.

Select a position, if possible, which takes advantage of the car manufacturer's existing speaker cutouts or knockouts.

The 300i woofer produces maximum undistorted bass only when mounted on a rigid surface and in an enclosure which is acoustically isolated from the passenger compartment. Flimsy panels or shelves must be reinforced with fiberboard or sheet metal; steps must also be taken to eliminate air leaks in and around the mounting surface. It is critical to the bass performance of the 300i that the housing be firmly seated to the mounting surface, without

air leaks or gaps around the edges. The 300i requires at least one cubic foot of air volume behind the woofer, but usually does not require a separate sub-enclosure behind the panel. Too small an air volume can produce a large peak in the mid-bass response, with a significant loss of deep bass output.

Its housing and treated *Stiffite* cone make the 300i impervious to most adverse physical conditions encountered in the automobile environment. However, care should be taken to avoid mounting locations which will subject the woofer to excessive heat, moisture or other hostile elements. Some car doors are poorly sealed and permit large quantities of water to leak in during rain or washing. If you are mounting the 300i in the door in an existing

cutout which has a plastic cup behind for water protection, remove the plastic cup. Water protection can be provided by installing plastic sheet above and over the rear of the 300i. Do not mount the 300i through the firewall or other external body wall.

If you are mounting the 300i in the door of the automobile, we recommend that you remove the door panel to simplify hole drilling and cutting, to check clearances, to determine attachment points and to check wire routing and dress. You may be able to use an existing hole for the speaker wire. If not, you must drill a hole in the door jamb for the speaker wire.

Use a rubber grommet or hose in the hole and choose the drill and grommet size carefully to ensure a snug fit between the wire and the grommet. A $\frac{1}{4}$ " grommet will snugly hold the speaker wire and requires a $\frac{3}{8}$ " hole.

Required tools and hardware You will need to assemble a set of tools in order to perform the installation. You will need an electric drill with a set of bits, screwdrivers, pliers, wire cutters, wire strippers, and electrical tape. You will also need a sabre saw with metal cutting blade to make the woofer mounting hole in a panel.

Hardware for typical mounting of the 300i has been included. You will need to supply hardware for unusual mounting methods. You will also need to supply the wires for speaker connections.

Wiring tips The speaker wire should be 18 AWG, or larger, stranded copper wire with heavy insulation. *Smaller* gauge numbers indicate *larger* wire. The larger the wire, the

smaller the power losses in the wire under heavy signal, and the higher the audio output of the 300i will be.

Most hardware stores carry 18 gauge or heavier lamp cord (also known as "zip" cord) and it is well suited for speaker connections. 16 AWG is recommended.

Color-code or label the free ends of all wires before routing so that there will be no doubt as to their origins. This is especially important with speaker wires, which may look the same for both channels.

Phasing It is essential to observe proper phasing (polarity) when connecting 300i's to an amplifier. This means that the left and right channels must be connected in identical polarity.

Speaker wires and "zip" cord usually have raised ribs or a color stripe running the length of the insulation of one of the conductors, while some speaker wires have clear insulation with wires of different color; one silver and one copper.

These markings enable you to clearly distinguish one conductor from the other. Decide on a convention for identifying which of the conductors is the "positive" and which the "negative," and be consistent. For example, by calling the ribbed, colored or copper conductor the positive wire and connecting that conductor to the positive, \oplus or red terminals of the amplifier and speakers, you can avoid phasing error.

Note: The woofer magnet must be exactly centered in the mounting hole, so that the acoustic load on the woofer cone is balanced.

Note: Make sure your amplifier and/or radio/cassette player are turned off while you make connections to the 300i.

Installation The 300i includes a hardware kit for normal mounting to a rear deck or door panel. The woofer requires a round hole with a diameter from 4 1/2" to 5". A 5" hole is preferred. Use the supplied template to mark the necessary hole centers and outlines.

Use a sharp knife to cut carpeting away from the holes, so that the drill bit or saw blade does not snag in the carpet or pull threads and ruin the appearance.

The accompanying illustrations show five methods of mounting the 300i. Follow the illustration which best represents your situation. The speaker wire can be dressed through the woofer hole and attached to the 300i's terminals prior to mounting the 300i to the panel.

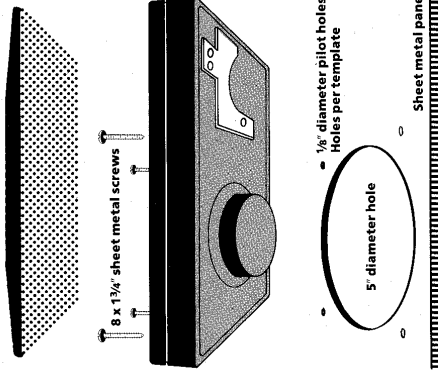
Method 1 is for mounting to a panel backed by sheet metal. Use the four #8 x 1 3/4" sheet metal screws. Drill 7/8" pilot holes for the screws, to make tightening easier.

Method 2 is for mounting to a fiberboard panel using the sheet metal screws and Timmerman nuts.

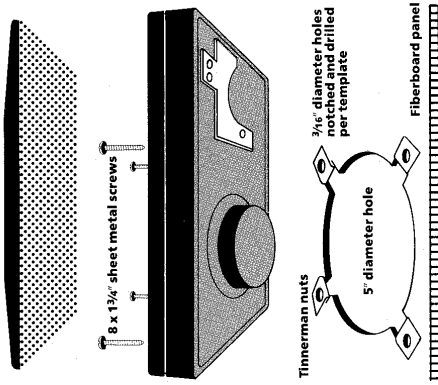
Method 3 is for mounting to a fiberboard panel using the #8 x 2 1/2" machine screws, standoffs, washers and nuts. Method 3 allows easy reinforcement of the panel with sheet metal for extra strength.

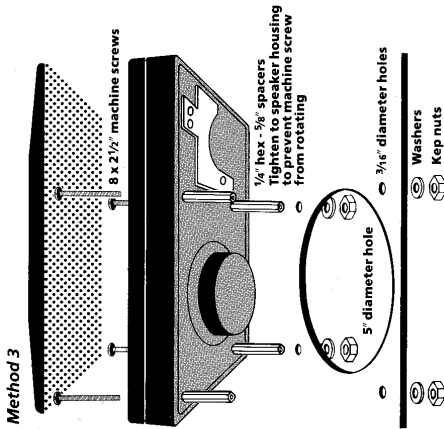
Carefully remove the grille of the 300i by prying up with an awl tip or the tip of a ballpoint pen. Insert the appropriate screws through the four mounting holes, and tighten the 300i firmly to the mounting surface.

Method 1



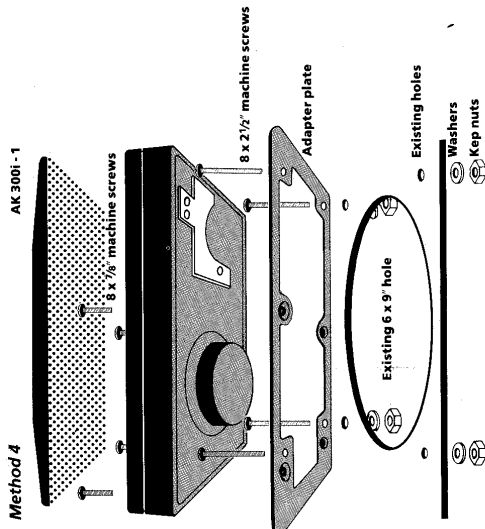
Method 2





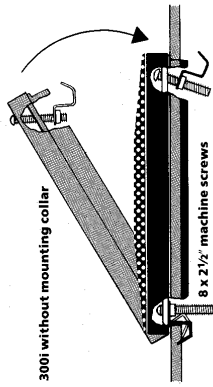
Special installations using optional accessory kits A previously mounted 6 x 9 speaker can be replaced with a 300i by using the AK-300i-1 accessory kit, which includes an adaptor plate which mounts over the 6 x 9 hole, and to which the 300i mounts. Method 4 shows the mounting.

The 300i can be super flush mounted without its collar, by cutting a round-cornered hole exactly the same size as the inside of the top of the collar. The accessory kit AK-300i-2 has the mounting hardware for fastening the 300i in the hole. Method 5 shows the mounting.



Method 5

300i without mounting collar



Now that you have finished the physical installation and electrical connections, you are ready to test the system. Turn on your radio/cassette player, but leave the volume at minimum. If your power amplifier turns on with a separate switch, turn it on now. Adjust the volume to a low level. Tune in a station or play a tape, and check the individual woofers and tweeters to be sure they are all operating. If you hear poor sound, distortion or no sound, immediately turn off the system and see **In case of difficulty**, below. If all seems well, operate your radio's balance control to be sure your connections are correctly made.



When you are satisfied with the basic installation, adjust the tweeter level controls to your preference. This will best be done while listening to your favorite FM stereo radio station. The tweeter level control has three positions. The uppermost position, nearest the ADS logo, provides the most tweeter output, while the bottom position provides the least output. Choose the position which sounds best to you.

Your ADS 300i system has been designed for long service life. Should you encounter difficulties beyond the scope of this section, please consult your ADS dealer or installer. Other than fuse replacement, please do not attempt your own repairs. Any repairs to the 300i should be made by ADS or an authorized ADS service facility.

If you want to consult the factory, write or call our customer service department:

Customer Service Manager
ADS, Analog & Digital Systems, Inc.
 One Progress Way
 Wilmington, MA 01887
 617 658-5100

No sound, low or distorted sound
 Check all 12 Volt power connections to your components. If any of the components is unpowered, there will be no sound from your system. Check all power fuses of the components.

If 12 Volt power is not the problem, check all audio connections between the radio/cassette player and amplifier, and amplifier and speakers. If only one channel is out, try interchanging cables between channels to see if you can isolate the problem. If the sound is distorted or faint, the problem very likely is a bad connection or faulty ground. With the volume turned down, wiggle all connections to see if you can spot an intermittent connection.

If none of these steps solves the problem, have the system checked by a qualified service person.

Note: Never replace the tweeter protection fuse with anything other than a fuse of the identical type and rating. If you cannot locate an exact replacement, use a fuse of the same type but lower current rating, e.g. 1A.

Poor tonal balance Make sure you are getting a high-quality signal from your radio/cassette player. Check the tone controls, equalizer settings, tape selector and noise reduction settings. Occasionally, a car tape player will not have the correct head alignment to play commercial tapes or tapes you've recorded at home. This can result in poor high frequency response. If you suspect the player, take it to a reputable service facility for test.

Although the 300i's tweeter level control does not make large changes, an improper setting for your particular installation can make the sound excessively dull or bright. Adjust the control to suit your taste.

Poor tonal balance can result from either the tweeter or woofer not operating. While playing music at low level, put your ear near each driver in turn and listen for output. If the tweeter is not operating, check the tweeter protection fuse by pulling the fuse cover straight away from the front of the 300i, and then removing the fuse by pulling on the plastic pull tab around the fuse. Replace the suspect fuse with the spare fuse, found inside the fuse cover. Remember to slip the plastic pull tab over the replacement fuse so that it also can be easily removed.

If the tweeter does not work after fuse replacement, or if the woofer does not work, take the 300i to an authorized ADS service facility for repair.

Highly distorted output The usual cause of severe distortion is inadequate power output from the radio/cassette player or amplifier. Trying to overcome the noise of driving at highway speeds with the windows down, for example, will tax the output abilities of any sound system. If you hear a pronounced knocking sound on bass peaks either the amplifier is out of power or the speaker is being overdriven. The solution to these problems is to turn down the volume control, or reduce the bass control or equalizer setting.

A damaged woofer or tweeter can also produce highly distorted sound. If you suspect driver damage, take the 300i to an authorized ADS service facility.

Note: Do not touch or attempt to clean the woofer cone or tweeter dome.

The ADS 300i is essentially maintenance free. Occasionally, check all of the connections and repair any that have become loose or worn. You should also check your wiring to make sure no potential hazards have developed. If dust or dirt accumulate on the grille or housing, clean them with a soft cloth or brush. Do not use any solvents or cleaning fluids on these units.

The unique materials and construction of the 300i system make its use attractive in a number of applications. Use in airplanes, boats, busses, and in bathrooms, bedrooms and kitchens are just a few of the many possibilities. When considering unusual uses, remember the following:

- Do not immerse the 300i in any liquid.
- Do not locate the 300i where it will be subject to splashing or spraying, or contact with corrosive gases.
- Protect the 300i, especially the rear of the woofer, from insects and fungi.

- Do not locate the 300i where it can become damp and then freeze.
- Do not use the 300i in extremely high humidity environments, such as in a steam room.

Frequency response	50 to 20,000 Hz, ± 3 dB*	surround and high temperature all-metal voice coil assembly
Impedance	4 Ohms, nominal	
Efficiency	90 dB SPL from 2.8 VRMS ("1 Watt") pink noise input, measured at 1 meter*	2500 Hz with 12 dB/Oct slopes
Driver complement	One acoustic suspension 1" soft dome tweeter with proprietary inside-dome damping and high temperature all-metal voice coil assembly; One 5 1/4" high compliance woofer with water resistant treatment and tapered Stiffite® cone, butyl rubber	50 Watts nominal, 100 Watts maximum peak program 5 Watts minimum, 100 Watts maximum
Recommended amplifier power		
Dimensions		214 mm/8.45" w x 144 mm/5.7" h x 40 mm/1.6" d, incl. grille; 38 mm/1.5" behind front of mounting surface

* Measured under laboratory conditions

Specifications

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Mounting hole required	114 mm/4.5" to 127 mm/5" diameter
Tweeter protection fuse	Type SFE 1.5A; spare included
Tweeter level control	3 position switch; approximately 0, 1.5 and 3 dB attenuation
Weight	1.7 kg/3 lbs. 12 oz.
Finish	Matte black
Grille	Acoustically transparent frameless black metal
Included accessories	Hardware kit with all hardware needed for normal installation

Optional accessories

AK-300i-1 adaptor kit for using existing 6 x 9 hole mounting kit; reduces height above and increases depth below mounting surface by 15 mm/0.6"

Owner's record Please record the 300i serial number, and the date and place of purchase in the spaces below.

Serial number
Date of purchase
Place of purchase

We urge you to save your sales receipt for future reference; you may want to attach it to this manual. Completing and mailing your Owner's Registration Card enters your purchase into our files.