

BASIC DIY

CSR'S DO-IT-YOURSELF INSTALL SERIES

PART TWO OF FOUR: AMPLIFY YOUR LIFE

HOW TO PROPERLY
INSTALL A POWER AMPLIFIER
AND RUN POWER AND SIGNAL
WIRING IN YOUR VEHICLE.

BY MICAH SHEVELOFF



TOOL AID: Below, the tools needed for part 2 of our DIY project—a circular saw, jigsaw, tape measure, cordless drill with drill bits, silicon spray, adhesive spray, T-square or straight-edge ruler, hammer, wire strippers, wire crimper, utility knife, panel tool, angled panel tool, General Motors battery tool, black duct tape, electrical tape, a hole punch, small and large wire ties, and scissors. Above, installer James Samudosky secures the project amp with anodized screws.

HELLO, ALL YOU BOYS AND GIRLS out there in Tweakville! It's time for installment number 2 in CAR STEREO REVIEW's informative 4-part series on how to install a basic car-stereo system. When last we met, I gave you step-by-step instructions on how to properly install a head unit ("Head Start," August 1999) live from my shop, Audio Coupe in Fairfield, Connecticut. Hopefully, all of you budding do-it-yourselfers found some valuable installation guidance.

Here in chapter 2 of our DIY saga, I'll be at it again, this time detailing how to install a multichannel power amplifier—specifically, Nakamichi's PA-506 6-channel 300-watt amp (50 watts x 6 into 4 ohms; \$699). In addition, I'll be discussing how to properly wire your entire system using Stinger power-distribution products and signal cables. Once again, ace installer and freelance male model James Samudosky, the man in the photos that you see here, will be assisting me. Our objective, as with every other installment in this series, is to encourage those with basic automotive and electronics knowledge to try a DIY project on their own. I also hope that some of you folks will recognize the amount of work that goes into a good installation and appreciate the value of seeking out a professional if you're not up to the task yourself. For the latter group, this article should serve as a guide by which to measure your



installer's competence. Now, let's get it on. Are you ready to amplify your life?

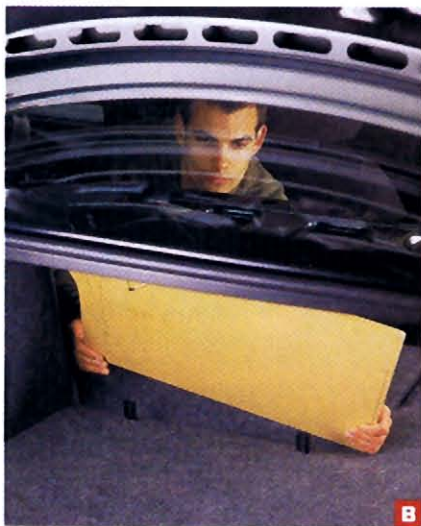
GETTING READY

The second phase of this installation project began much the same way the first did—with a broom and dust pan. Although you may think I'm being a bit anal here, I can't stress how important it is to keep your work environment clean. How come? First, it's very easy to lose loose parts in a cluttered install bay. If you lose a piece of a jigsaw puzzle, it's impossible to complete, right? And second, if you're standing in filth, you'll trudge it into your car on the soles of your shoes. Getting stains and grime out of your vehicle's carpet and upholstery is expensive and time consuming. More often than not, the stain-removal process can be ineffectual.

After tidying up his work area and attacking the project vehicle—the very same '99 Saturn SL 2 from part 1—with a vacuum, Samudsky organized the tools and supplies that he'd need to complete the install on his workbench. For



RACK ORDER: After deciding on a mounting location for the amplifier, it's time to fabricate a custom-fit rack for it. Measure the dimensions of the space where you plan to mount the rack with a tape measure, trace the exact shape onto a piece of MDF, then cut it out with a circular saw (A).



SECURE MEASURES: After fitting the rack to the vehicle's contours with a jigsaw (B), it's time to prep the mounting locale. To support the bottom of the rack, installer Samudsky creates a couple of angled support brackets out of aluminum-bar stock that attach directly to the vehicle's floor pan. In order to ensure that no harm would come to the fuel tank when drilling holes to secure the support brackets, Samudsky uses a wood template that only allowed the drill bit to pierce the metal floor by $\frac{1}{8}$ inch (C). He then secures each bracket with a lock washer and an anodized $\frac{1}{2}$ -inch sheet-metal screw (D).

this (or any) installation, using the correct tools is essential to getting the job done properly. He also disconnected the battery, which is the first step in doing any major electrical work on your car. This disables all of the vehicle's electrical circuits so that they can't be damaged while you're doing any work.

LOCATION, LOCATION, LOCATION

All right, it's now time to find a mounting location for your amplifier. This process takes a great deal of care and thought, especially with a big unit like the Nakamichi PA-506 (20 x 9 $\frac{3}{4}$ x 2 $\frac{1}{2}$ inches, w/d/h). The amplifier must be able to vent heat

efficiently, it shouldn't take up a lot of critical space inside the vehicle, and the power and signal wires must be protected from potential harm.

Samudsky and I dedicated quite a bit of time to finding a place in the Saturn to mount this rather large 6-channel power plant. We had to consider the fact that the

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vehicle is the owner's only means of transportation; that is, it's used for everything from basic daily commuting to long-haul road trips. As such, the need to maintain the car's already limited cargo space for things like shopping bags and luggage, for example, was an essential condition of the install. That meant the amplifier rack had to be stealth. Even more important, it had to be strong enough to withstand daily abuse.

After learning that the vehicle's owner wasn't planning to haul anything of any serious size—probably the largest things that'll ever be stuffed into the Saturn's trunk or passenger cabin are a pair of snow skis, maybe two pairs at most—and

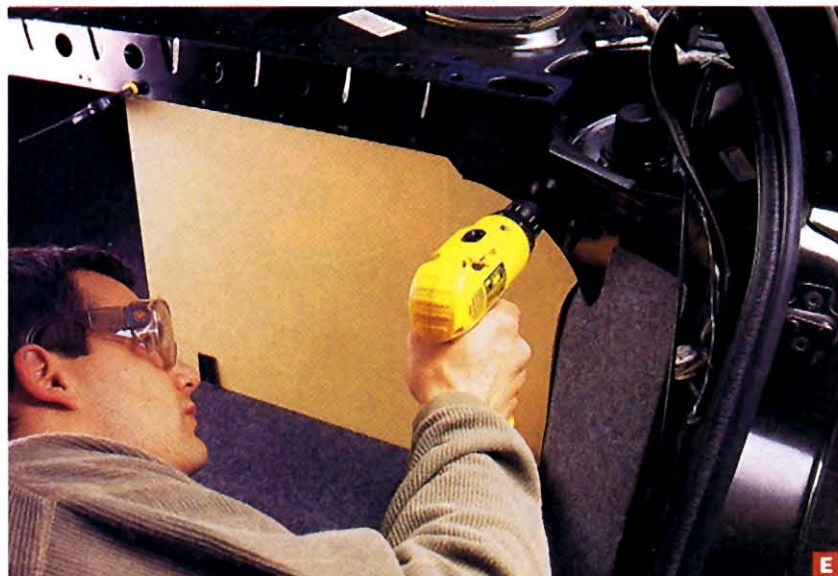
that the car has a split fold-down rear seat, Samudosky and I decided to mount the amplifier on a custom-made amp rack behind the driver's-side rear seat facing into the trunk. Although this mounting arrangement blocks one whole side of the rear-seat passthrough from the trunk into the Saturn's passenger cabin, it doesn't actually take up a great deal of storage space. The owner can stow things in front of the rack in the passenger cabin when the seat is folded down, as well as behind it in the trunk area. Additionally, this

mounting strategy won't interfere with the passenger's-side rear-seat passthrough; therefore, the vehicle's owner can still haul something lengthy (such as those snow skis) without any problem.

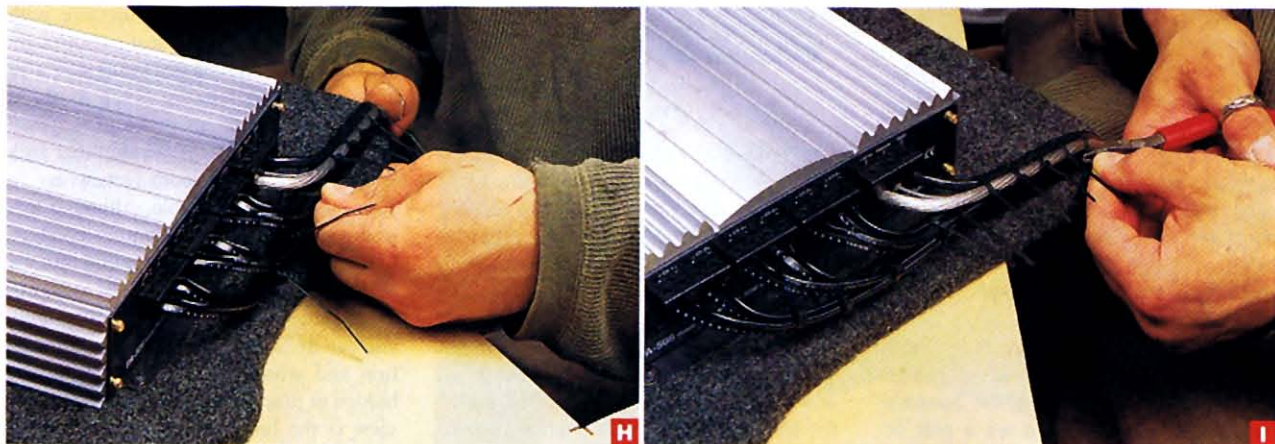
Any way you slice it, an amplifier rack is going to take up room somewhere in your car. It's unavoidable. Although this rear-seat-passthrough mounting configuration isn't a seamless integration into the Saturn, we felt it was the best compromise between form and function. Only you can decide what mounting configuration and whether the component(s) be hidden or placed out in the open for all to view is the best thing for your lifestyle and comfort zone.

RACK JOB

After deciding on a mounting location, it was time to fabricate an amplifier rack for the amplifier. The purpose of the amp rack is to support the amplifier in an area where there'd previously been no flat surface to mount it to. When designing new cars, automobile manufacturers never seem to take into consideration the concept that car-stereo enthusiasts might want to install hefty audio amplifiers inside them, so they rarely leave installers vacant flat surfaces to attach things to. Amplifiers are often heavy, so a custom-fabbed wood or metal platform insures that your installation will endure the bumps and bruises of life on the road. The rack is also useful for helping to neatly secure all of the wires that come together at the amplifier, as you'll soon see.



THE HOLE TRUTH: After the brackets are in place, Samudosky simultaneously drills mounting holes through the parcel shelf's metal lip and the top edge of the MDF rack so that they match up precisely (E). He finishes the rack cosmetically by applying trunk-liner material to the MDF (F), then secures the amplifier using anodized screws (G).



HARNESS SPACING: After inserting wire ends into their respective receptacles on the amplifier and then securing them, neatly arrange all of the power and speaker wiring in groups and then harness them together with wire ties (H). Remember to cut off the excess wire ties with flush cuts (I).



RACK STEERING: Once the amplifier is wired, the entire amp rack/wiring assembly can be secured into position as a single component (J). In the Saturn, Samudosky secures the rack using a row of sheet-metal screws along the top edge of the rack (K) and one through each support bracket mounted in the floor (L).



The first step in building an amp rack is to measure the area where you want to install the mounting platform. In the Saturn, the rack had to be large enough to accommodate the amp, yet small enough to maximize storage space and not interfere with the rear-seat passthrough on the passenger's side of the vehicle. It also had to be custom-fit to the steel framework behind the rear seat. Using a tape measure, Samudosky measured the steel frame around the space he wanted to mount the

rack, making sure not to extend into the passenger's-side rear-seat passthrough. After taking accurate measurements, he traced the rack's exact shape onto a piece of 1/2-inch medium-density fiberboard (MDF) with a pencil. Samudosky chose to use 1/2-inch MDF because it's the smallest thickness of MDF that's really strong and will enable the amplifier's mounting screws to get a really good bite into the wood. Once the shape was traced, Samudosky cut the platform from a much larg-

er sheet of MDF using a circular saw. After a preliminary fitting, Samudosky cut the MDF to fit the vehicle's contours using a jigsaw to ensure that it would fit like a glove in its new home. Once the shape of the amp rack is set, it needs to be filed and sanded to make it smooth.

By the way, you may have noticed Samudosky's stylish "ear wear" in the top photo on page 30. These protectors are important additions to anyone's tool box. Many machine tools are loud enough to

be harmful to your hearing, especially if they're used regularly. Wearing protective gear, such as the headset Samudosky uses, will reduce your chances of hearing loss. Protective eyewear is also a must.

After sanding the rack smooth, you now want to prep it for installation. Any of the sheet-metal panels or supports found inside most cars make for solid mounting surfaces. However—and this is an important however—do *not* drill any holes through these surfaces until you're certain of what's on the other side. It's all too easy to accidentally puncture a factory wire harness, a brake or fuel line, or even the fuel tank with a misplaced drill bit. Always be extra cautious during this part of the install.

The top edge of the Saturn's amp rack was designed to be screwed to a metal lip along the bottom edge of the vehicle's stock rear parcel shelf. However, there were no convenient surfaces for the bottom of the rack to mount to. To remedy this problem, Samudosky created a pair of angle brackets to support the lower portion of the rack out of aluminum-bar stock, a substance that's readily available at most hardware stores for \$8 for a 6-foot piece. Aluminum-bar stock makes great brackets because it's easy to shape and cut, and it's relatively sturdy.

The support brackets were designed to secure the rack directly to the trunk's floor pan. Before bolting the bracket into the floor, Samudosky had to make sure that drilling through the sheet-metal surface wouldn't damage anything on the other side, so he crawled beneath the car with a shop light for a quick look. He discovered that the gas tank was directly below the area he intended to place his angle bracket. However, there was about a 1-inch gap between the tank and the floor pan. So that he wouldn't puncture the fuel tank when drilling holes to secure the brackets, Samudosky made a small wood template that only allows the drill bit to pierce the floor pan $\frac{1}{8}$ inch. After carefully drilling the holes, Samudosky secured the bracket to the floor pan with a lock washer and an anodized $\frac{1}{2}$ -inch sheet-metal screw.

Once the bottom support brackets were in place, Samudosky simultaneously drilled mounting holes through the metal lip on the bottom of the parcel shelf and the top edge of the MDF rack. Mounting holes were also drilled through the holes already drilled in the bottom brackets and into the MDF rack. This way, the mounting holes would line up perfectly with no worries. Note: To keep the rack sturdy when drilling the pilot holes, it should be held in place with clamps.

GOTTA LOOK SHARP

It's now time to finish the rack cosmetically. There are many materials you can cover a rack with, including leather, vinyl, and carpet. For basic installs, I like to use trunk-liner material that matches the factory trunk liner. Trunk liner is a durable automotive fabric that's relatively easy to work with and fairly inexpensive, running \$9 a square yard.

Because the Saturn's rear seats fold down, both sides of the rack can easily be seen and, thus, both sides must be covered with trunk liner to maintain stock cosmetics. To cover a rack, place the custom-fit MDF on a sheet of the trunk-liner fabric. Wrap the liner around the board so that both sides are completely covered. Mark a pattern on the fabric using a chalk pencil or magic marker and cut the shape out using a sharp utility knife; the edges

the wood with no bubbles. To make sure that the fabric covers the rack's corners in a nearly seamless fashion, cut little slits, called crow's feet, in the fabric where it folds around the wood. The slits will enable you to "turn the corners" smoothly without an ugly fold being visible. This technique is something that you may wish to practice a few times with some scrap before you attempt it on the real thing. The key to the success of this process is to cut the fabric precisely so that, once assembled, all of the seams are nearly invisible.

With the cosmetics set, it's time to mount the amp using anodized screws and washers. The washers are very important because an amplifier can rattle loose from its mount over time if it's not secured properly.

WORLD OF WIRE

The next step is to wire the amp. Generally speaking, an amp needs a main 12-volt power source, a ground wire, a remote-



SEAT SENSITIVE: To map out the wire pathways, you'll have to take a close look at the car's interior layout. Seats (M) and trim panels (N) will need to be removed at this point. (In most vehicles, it's nearly impossible to run cables from one end of your car to the other without doing so.)

should be trimmed with a sharp pair of scissors. It's generally a good idea to cut the fabric slightly large. The extra cloth allows for slippage of the wood or a small margin of measurement error.

Apply spray trim adhesive to one side of the MDF and the fabric, and stick them together. With one side of the MDF rack covered, apply spray adhesive to the rest of the board and wrap the liner around its edges, making sure the liner adheres to

turn-on lead, RCA cables (for low-level audio input), and speaker wire (for high-level audio output) to function properly. All of the wires should run from the amp outward; i.e., all of the wires should be measured and cut to the correct lengths and attached to the amplifier while it's still sitting on the workbench. Why? Because it's much easier to make these minute connections on a big, flat table rather than while you're scrunched and

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hunched inside of your vehicle's trunk.

Before cutting any cables, you should map out the exact pathway signal and power wires will take to their destinations. This process will make sure that you gauge cable lengths accurately instead of simply measuring the distance from the amp to the wire's destination. If you cut a length of cable and it turns out to be a couple of inches short, you'll have to scrap it and start all over again. That can very quickly become an expensive miscalculation.

To map out the wire pathways, you'll have to take a close look at the car's interior layout. Seats and trim panels will

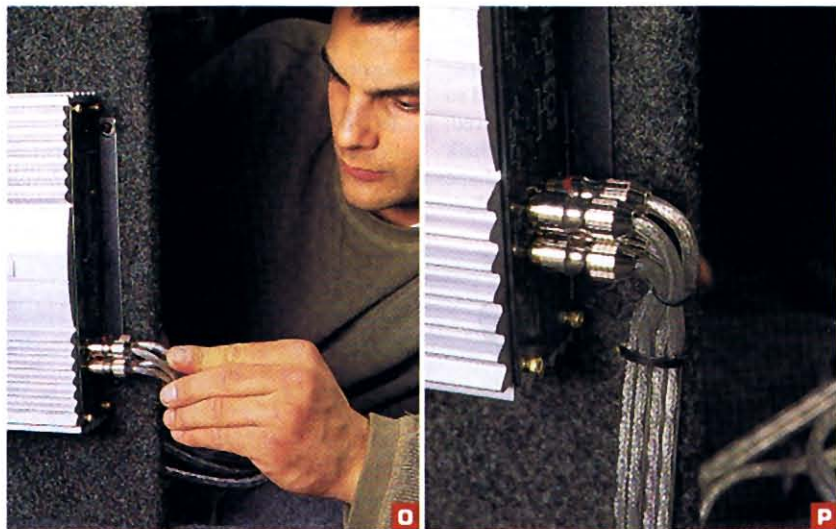
need to be removed at this point. It's impossible in most vehicles to run cables from one end of a car to the other without removing the seats and plastic panels. The process of removing the front seats and trim panels will be different for every vehicle. If you're confused or need guidance during this portion of the install, consult your local car dealer; their help can be invaluable. During the winter months, I let the car warm up before removing any panels because the plastic is

much more brittle when it's cold. The carpet will also have to be removed or pulled out of the way in order to access the floor pan.

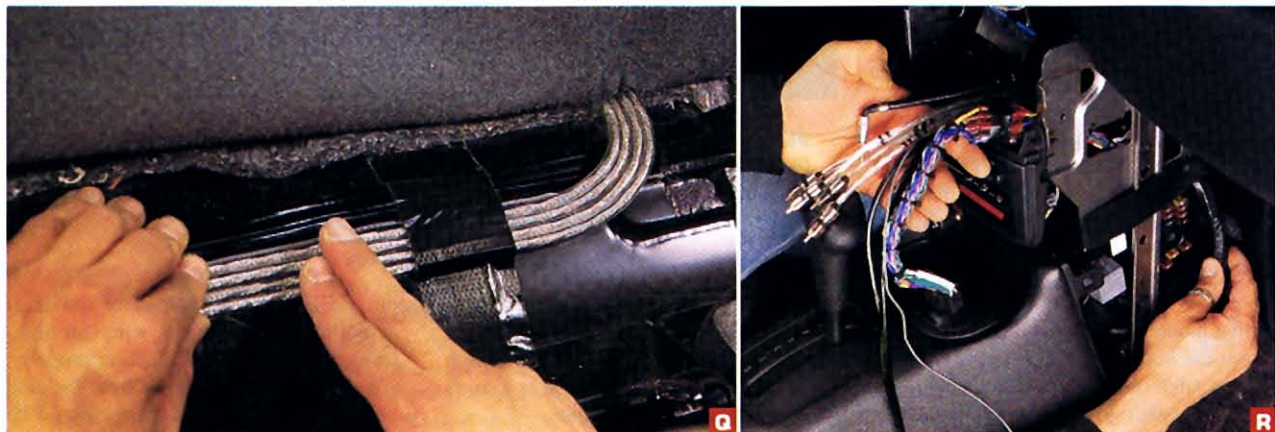
When choosing a path for signal wires to run, you should pay extra close attention to where the factory electrical harnesses are located. You must be careful to keep all low-level audio cables (i.e., RCA cables) away from the car's electrical wiring. Running audio wiring too close to electrical harnesses could result in radiated-noise problems. Also, determine what side of the engine compartment the battery is on. If the battery is on the driver's side of the engine compartment, for example, the amplifier's main 12-volt power source should run down the driver's side of the vehicle, and vice versa. (Planning is *everything* during this stage of the install. There's simply too much at stake.)

Nakamichi designed the PA-506 amp so that power and speaker connections are located on one end of the chassis while the RCA audio-input stages are on the other. Different make and model amplifiers will have different design configurations, of course, so be sure to plan a strategy which allows the wiring to exit the amp and disappear into the car without being pinched or snagged.

Each make and model amplifier may also have its own type of wire termination. It's handy to have a healthy selection of connectors on hand before starting out on this project. Electrical-supply shops carry most of the common types, such as spade lugs (they look like little forks) and ring terminals. I suggest that you make a list of the connectors you'll need, noting wire gauge and quantity needed, and make a trip to your local



SIGNALS SCENE: Because the signal cables terminate into the amp's RCA input connectors on the end of the amp closest to the passenger's-side rear-seat passthrough (O), Samudovsky secures the signal cables to the rack so that they won't get caught on luggage or other loose items (P).



JOINED AT THE HEAD: The RCAs and 12-volt remote-turn-on wires are routed along the passenger's side of the transmission hump to the back of the Sony CDX-C6750 CD head unit that was installed back in part one of this series. The RCA cables are arranged side by side and taped to the vehicle's floor pan using duct tape (Q). They're then snaked up behind the radio console (R) and mated with the head unit.



BRUSH JOB: When grounding your amp to the vehicle's chassis, it's important to remove any paint or primer from the area with a stiff wire brush (S). Use a quality ring connector and a self-tapping screw with a star washer to make a solid ground connection (T). Always run the amp's main 12-volt power source up the side of the vehicle that the battery is located on (U).

rack/wiring assembly into the Saturn as one piece and secured it using a row of sheet-metal screws along the top edge of the rack and one through each of his trusty angle brackets at the bottom.

LAYING CABLE

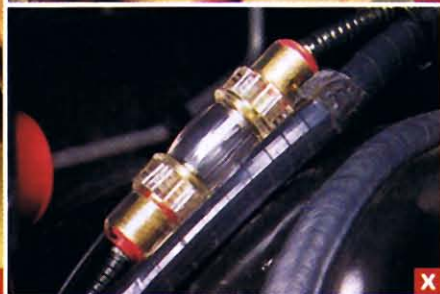
Once the rack is securely in place, you'll need to run all of the wires to their respective termination points. First up are the low-level input-signal RCA cables. These run from the amp to the source unit. For the Saturn install, we used pre-terminated Stinger Bullet series RCA cables (17 feet; \$32.70). Using pre-terminated cables is the easiest route. However, if the correct cable lengths aren't available in a pre-terminated set, bulk cable can be used. You'll have to attach male RCA connectors to both ends of the cable. While this may sound like an easy task, it isn't. For our basic DIY purposes, pre-terminated RCAs are the way to go.

Because the signal cables terminate into the end of the amplifier closest to the passenger's-side rear-seat passthrough, Samudosky was careful to secure the signal cables to the rack so they wouldn't get caught on any stray luggage and get damaged or unplugged. Normally, it's not a good idea to have connectors so close to the "activity" in the trunk. Since this amp is so large, though, we had little choice. There are many types of wire clamps available that'll allow you to anchor a

hardware store, install shop, or RadioShack before starting this (or any) electrical project. And be sure to buy some extra connectors, just in case. Speaker and power wires are usually attached to the amp with the spade-lug connectors. These crimp-on connectors will insure a solid connection to a screw-down terminal.

Some amps, like the Nakamichi PA-506, come with customized clamp connectors that accept bare wire. In the Nak PA-506, the wire is placed in the receptacle and held in place by a screw-down clamp-type fastener. This is also an acceptable method of wire connection. However, it's important to make sure the clamps are tightened down and there's no tension pulling on the harness to cause the wires to come loose over time.

After inserting the bare wire ends into their respective receptacles on the amp and securing them, Samudosky neatly arranged all of the power and speaker wiring in a group and harnessed them together using wire ties. Big groups of wires tied together in this fashion become very sturdy and reliable. They're also very neat. He then loaded the entire amp



BLANK GENERATION: Using a factory-drilled hole to get through the Saturn's firewall, Samudosky turned an unused rubber plug, known as a blank, into a grommet with a hole punch (V) and ran the power wire through it (W). It's essential to fuse the amplifier's main power lead close to the battery to prevent fire by way of a short circuit (X).

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harness to your amp rack, either by screwing the clamp in place or using a self-stick adhesive. In these situations, being extra careful is the only way to go. Keeping it basic, Samudsky drilled a hole through the rack, ran a simple wire tie through the hole, wrapped it around the end of the board and over the RCAs, and secured it. Nice. A simple solution to a complex problem.

Once secured to the board, the four shielded Stinger RCA cables (front right/left, rear right/left) along with the 12-volt remote-turn-on lead were routed along the passenger's side of the transmission hump to the back of the Sony CDX-C6750 CD head unit that was installed in part one of "Basic DIY" last month. The RCA cables were carefully arranged side by side and secured to the vehicle's floor pan using duct tape. This way, the wire harness would be as flat as could be while traveling under the carpet.

Once you reach the dash, you'll want to snake the RCAs and the remote-turn-on lead up behind the radio console and mate them with their respective equivalents on the head unit.

Your next task is to ground the amp to the vehicle's chassis. Samudsky routed a Stinger Pro 8-gauge ground lead (2½ feet; \$0.65 per foot, \$1.63 total) to a spot under the back seat. The ground wire should be kept as short as possible to prevent it from acting as an antenna and attracting extraneous noise. Because paint and primer will interfere with the flow of electricity to the amp's main ground and starve the poor thing of current, they should be removed from the surface area of your grounding site with a stiff wire brush. It's wise to try and secure the main ground on or near something substantial, like the seat-belt bolts. This insures that you're not far from a frame member, which carries current right back to the battery. A ring connector can then be crimped to the 8-gauge ground cable, and a self-tapping screw and star washer used to make a solid ground connection.

Next up on the to-do list is to run the amplifier's main 12-volt power source. Next to the ground wire, Samudsky ran silver-colored 8-gauge Stinger HPM power cable (18 feet; \$0.76 per foot, \$13.68 total) up the driver's side of the vehicle. Why? Because the battery is located on that side of the car. (In the accompanying photos, it's easy to confuse the power wire with the silver RCA cables, so observe carefully.) There are exceptions to this rule, however—like when it's physically impossible to do so, for example. You should always run signal and

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power wires away from high-traffic areas and sharp objects. There are no exceptions to this rule.

When you're running power wire to the vehicle's battery, it must pass through the firewall, which is the metal division between the passenger cabin and the engine compartment. This isn't a tricky procedure, but one you shouldn't take lightly. There are two ways one can go through the firewall. One is to find a factory-drilled hole and try to squeeze the power wire through. The other is to drill a new hole. Either way, a grommet must *always* be used to prevent the wire from rubbing against the sheet metal, which would eventually damage the cable and cause a short circuit, something that could result in a fire. The grommet will also serve as a gasket, keeping rain and other moisture out of the passenger compartment.

Samudsky was pleased to find an unused rubber plug, called a blank, in the Saturn's firewall that was ready and waiting for the power wire. These blanks are installed at the factory to fill an unused hole in the firewall that was intended for use with an option or device not included in this particular vehicle. (If Samudsky hadn't found a blank, he would've had to drill a hole and fill it with a pre-made rubber grommet. As I said before, drilling a hole in the firewall isn't usually all that difficult, but remember that it's important to check what's on the other side of the firewall before you start to drill.) To pass the power wire through the stock blank, Samudsky simply used a hole punch to perforate the rubber plug, sprayed it with silicone, and ran the wire through the hole. He then re-installed the plug.

Now that your main power cable is under the hood, it's time to install a fuseholder between the amp and the battery and terminate the power cable at the battery. Nakamichi thoughtfully provided an external fuseholder with the PA-506 amp. However, this isn't an industry norm. Generally speaking, you'll have to purchase an external fuseholder from your local car-stereo specialty retailer, which can cost from \$5 to \$40. Note: This fuseholder isn't the one built into the amp's chassis or in a power lead that should be installed close to the amp—this fuseholder should be installed as close to the battery as possible. It's designed to protect the main power cable in case of a short circuit. If there's a short circuit, the fuse will pop, cutting off electricity. Without a

fuse, the short could cause the cable to heat up, melt, and cause a fire.

Samudsky installed the inline device about 18 inches from the battery. The Nak fuseholder has three parts: two end caps and a center for the fuse. Bare wire is run into each end cap, where a set screw-type connector is tightened with an Allen wrench to hold it in place. Samudsky then crimped a ring connector on the lead that attaches directly to the positive battery lug and then attached it to the battery. The crimp connection was then covered with shrink tubing to make it weather-protected and more reliable. After covering the power cable that runs un-

der the hood with split loom (a plastic protective covering), the three pieces of the fuseholder were reassembled sans the fuse and secured to a large stock wire harness using heavy wire ties. This process of installing a fuseholder differs from device to device, so follow the directions provided with the inline fuseholder that you purchase.

Note: You should *always* leave the fuse out of the fuseholder until you're ready to fire up the system. Putting the fuse in the holder should be the last thing you do prior to reconnecting the battery.

POWER PLANTED

Stinger 14-gauge Pro black speaker wire (approximately 45 feet; \$0.36 per foot, \$16.20 total) was used throughout the vehicle. Remember, it's important to keep signal wires away from power wires. As such, the speaker wire feeding the Saturn's stock front-door-mounted speakers was run up the passenger's side of the car in the same manner that the RCAs were (as fat as possible and held in place with duct tape). The cable for the right speaker was run to the passenger's-side kickpanel, where it was stored for use in part three of our series. Speaker wire for the driver's-side door was run across the front of the vehicle under the dash and stored in the driver's-side kickpanel. Wire for the rear speakers was run up along the under side of the package tray. A speaker lead for the sub enclosure was simply tucked up under the package shelf for use in the last installment of our DIY series, which will appear in the November/December 1999 issue. Next issue, we'll discuss how to get the speaker wire into the doors and how to actually make crossover and speaker-lead connections for when we install the front and rear speakers. Stay tuned—and stay tweaked. ■

Micah Sheveloff can be queried about car-stereo matters at popdoggie@aol.com. You can also visit his shop on the Web at audiocoupe.com.

REQUIRED TOOLS

- Circular saw
- Jigsaw
- Tape measure
- Cordless drill with drill bits
- Silicon spray
- Adhesive spray
- T-square or straight-edge ruler
- Hammer
- Wire strippers
- Wire crimper
- Utility knife
- Panel tool
- Angled panel tool
- General Motors battery tool
- Black duct tape
- Electrical tape
- Hole punch
- Small and large wire ties
- Scissors
- Right-angle 3/8-inch ratchet with extension (used for seat removal)
- Right-angle 1/2-inch ratchet with extension (used for seat removal)

PARTS & COST FOR BASIC DIY, PART TWO

Nakamichi PA-506 6-channel power amplifier	\$699.00
Stinger Bullet RCAs (pre-terminated; 2 pair, 17 feet)	\$65.40
Stinger Pro 8-gauge ground wire (2 feet)	\$1.63
Stinger HPM 8-gauge power cable (18 feet)	\$13.68
Stinger Pro 14-gauge speaker cable (45 feet)	\$16.20
Accessories and materials (MDF, wire ties, screws, etc.)	\$130.00
TOTAL	\$925.91

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NO PURCHASE NECESSARY. On an official entry form or a 3"x 5" piece of paper, print your name, address, zip code, and phone number. No mechanical reproductions of card or entry form will be accepted. Enter as often as you wish, but mail each entry separately. Mail entries to CSR DIY Sweepstakes, P.O. Box 1212, Radio City Station, New York, NY 10101-1212. To be eligible, all entries must be received by December 31, 1999. All entries become the property of Hachette Filipacchi Magazines, Inc., which reserve the right to reprint the name, address and photo of winner for publicity purposes. The winner will be selected from eligible entries in a random drawing to be held on or about January 15, 2000 under the supervision of Hachette Filipacchi Magazines, whose decision will be final. The prize, to be awarded to one winner, includes these items at the following approximate minimum retail values (final retail value contingent on winner supplying make and model year of vehicle): Sony CDX-C6750 CD receiver (\$280); Nakamichi PA-506 power amplifier (\$799); 1 pair each of Boston Acoustics Pro component speakers (\$400), Rally coaxial speakers (\$140), and Pro subwoofers (\$440); Q-Logic subwoofer enclosure (\$90); miscellaneous Stinger/Best Kits cables and accessories (\$150); miscellaneous tools (supplied by Stinger/AAMP; \$300). Hachette Filipacchi reserves the right to substitute prizes of equal or greater value. The winner will be notified by mail and required to sign an affidavit of eligibility and release of liability. If under age 18, a parent or guardian must sign. Failure to return the affidavit within 10 days will result in an alternate winner being selected. Odds of winning will depend on the number of entries received. Prizes are not transferable and there is no substitute for prizes except at the discretion of Hachette Filipacchi. The contest is open to legal residents of the continental United States. Employees of Hachette Filipacchi Magazines, Sony, Nakamichi, Boston Acoustics, Q-Logic, Stinger/AAMP, Best Kits, their families, affiliates, or advertising and promotion agencies, are not eligible. Void where prohibited or restricted by law. For the prize winner's name, send a self-addressed stamped envelope to: DIY Sweepstakes Winner, Hachette Filipacchi Magazines, Inc., 45th Floor, 1633 Broadway, New York, NY 10019.

CSR DIY SWEEPSTAKES OFFICIAL ENTRY FORM

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Address _____

City _____

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