

Installing the STS-1 Sequential Turn Signal System

Thank you for purchasing the **STS** model **Sequential Turn Signal System**. These systems are state of the art electronic modules that, when installed properly, will provide you with years of trouble-free service.

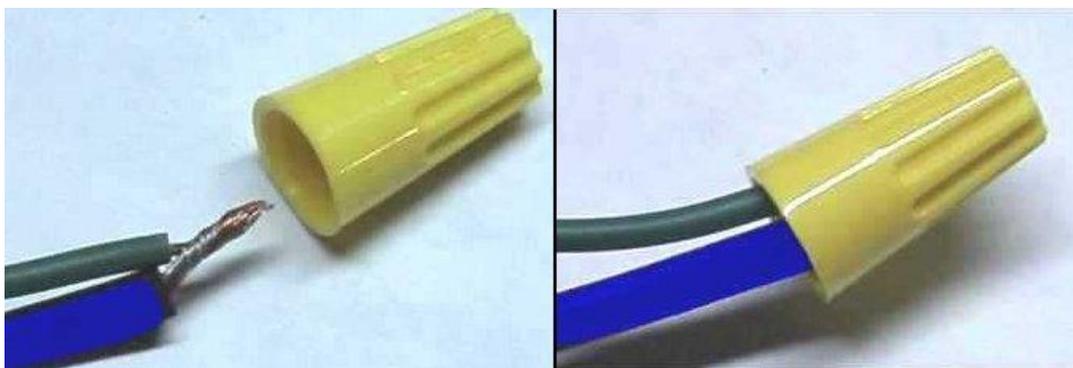
There are two ways to install these modules -- with brake light sequencing, and without. Read the section on Brake Light Sequencing for more information.

For ease of installation, the STS-1 system comes with two separate modules. One module attaches to the left side lamps, and the other attaches to the right side lamps. Since the modules are identical, either one can be installed on either side of the car.

For color pictures, last minute updates, and some car specific information, visit <http://www.webelectricproducts.com/products.htm> and follow the Online Instructions link.

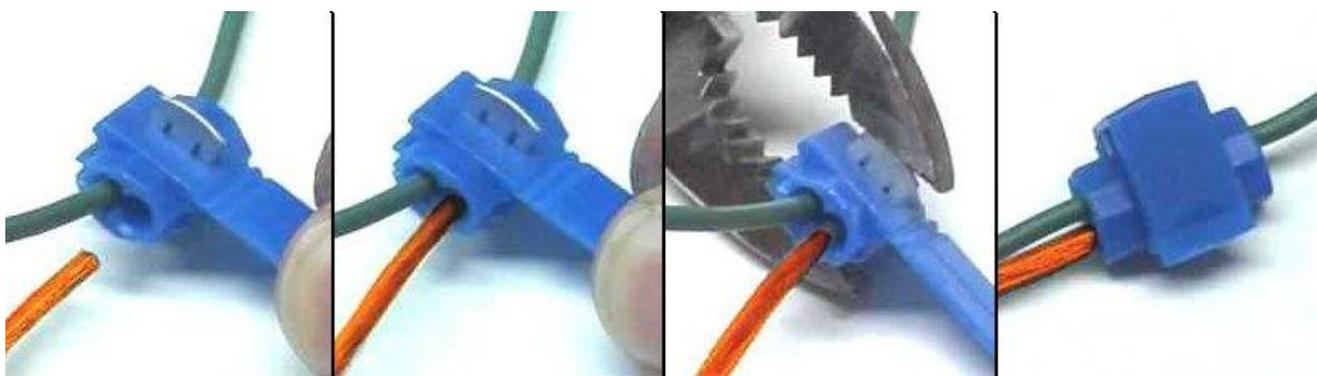
Making Connections

The STS modules come complete with all the necessary wiring and connections to install into your car. One or more of the following connectors may be included in your kit. If you have never used quick connectors or wire nuts, read the section on these devices to familiarize yourself with how they work, and how to install them. If you've worked with them before, skip to the section that describes how to install the unit in your car.



A Wire Nut Connection

- 1) Strip 1/2" of insulation from both wires and twist the wires together.
- 2) Screw the wire nut on to the wires until it's snug.



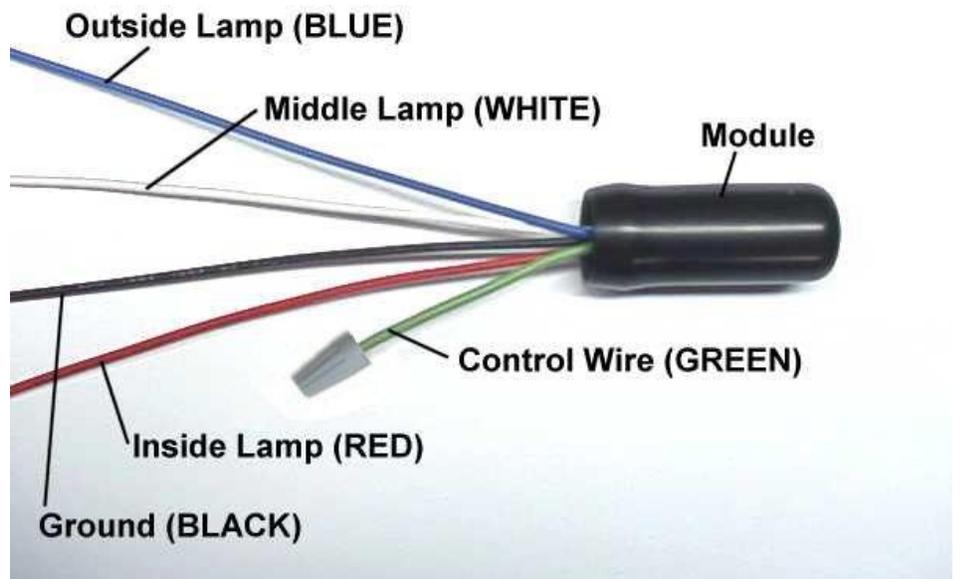
A Quick-Splice Connector

- 1) Slide the existing harness wire into the Quick-Splice Connector from the side.
- 2) Insert the module wire into the end of the Quick-Splice Connector. Note that the insulation is not stripped.
- 3) Using a pair of pliers, carefully squeeze the metal tang until it is flush with the top of the connector. Make sure the tab is flush with the body of the connector, or it may not make a good connection.
- 4) Fold the top over the connector and squeeze it closed to insulate the tang.

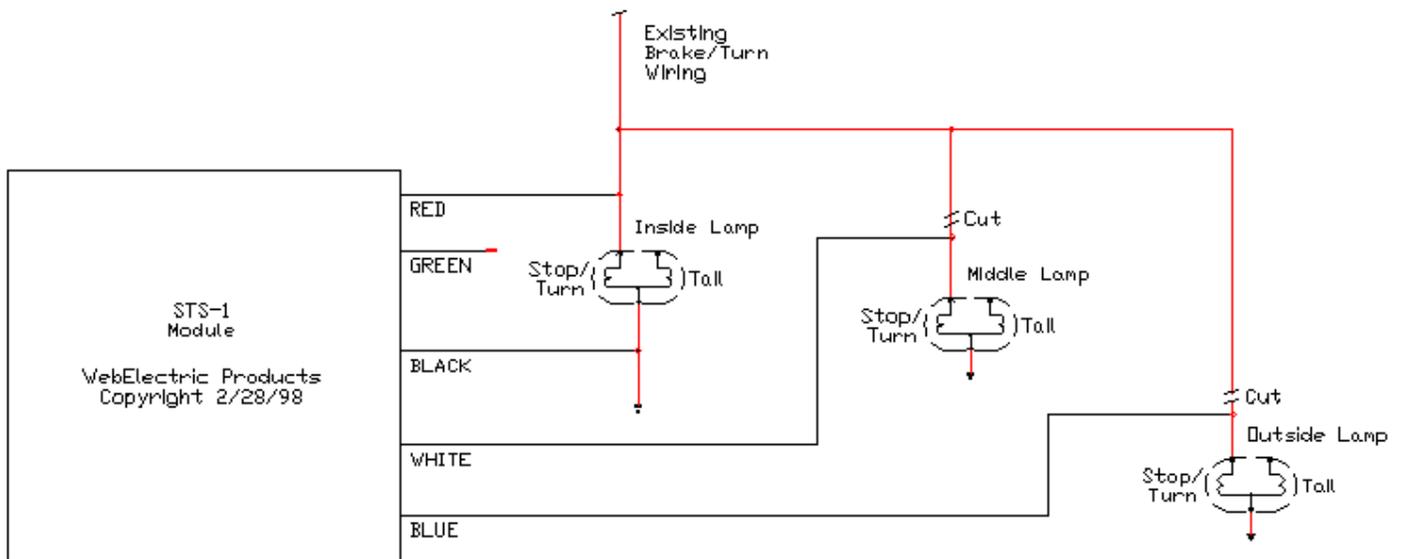
INSTALLATION INSTRUCTIONS

The STS-1 modules will control up to 3 combination brake/turn lamps (bright filaments) on each side of the car. Be sure to note that your car might have three tail lights, but only 2 brake/turn signal lamps. If this is the case, you can modify your tail light fixture to have 3 brake/turn lamps by adding/changing a socket. Or, if you wish, you can simply connect only the two existing lamps.

Please take a moment to review the connections to the module. After installation, **BE SURE** to follow the **Testing procedure** located at the end of the instructions.



Refer to the diagram below and start on one side of the car. Identify the BRAKE/TURN SIGNAL wire that goes to the tail light fixture. On late model cars, there are 3 wires going into the first socket. Typically, the ground wire is black, the tail light wire is brown, and the brake/turn wire is yellow, green, or orange. You **MUST** identify these wires in order to have a successful installation. Use a volt meter or test light to aid you.



Note that on older cars, the ground connection is made through the chassis. This is the case with cars that have metal sockets that are snapped into the fixture. If your car is like that, you must make a separate ground connection with the black module wire.

Side One

- 1) Remove the tail light fixtures and remove the lamp sockets from them. If you need some extra room to work on the wires, carefully pull the inside and middle lamp harnesses away from the body of the car by pulling any hold-down clips out of their holes. Also, peel away some of the harness tape.
- 2) On the **INSIDE** bulb, there are three or four wires coming out of the socket. Check the car for the correct wiring colors, but usually, the **BLACK** wire is ground, the **BROWN** wire is the tail light and the **YELLOW** wire (sometimes it is **GREEN, GREEN/ORANGE or ORANGE/GRAY**) is the turn signal. There may be two turn signal wires. You **must** identify these wires in order to install the STS system correctly.

- 3) The STS modules **must be mounted inside the trunk**. Trace the signal and ground wires back to where they exit the car body, and find a suitable place in the trunk to mount each module. They are small enough that most of the time, they can just lay behind the trunk panel. Once you find the harness, unwrap it to expose the **SIGNAL** and **GROUND** wires.
- 4) Inside the trunk, use a quick-splice connector (supplied), connect the **RED** wire of the module to the **SIGNAL** wire of the harness. If there are 2 signal wires, connect the red module wire to one of them.
- 5) Using another quick-splice connector, connect the **BLACK** wire of the module to the **GROUND** wire of the harness. If your car has grounded sockets (no black wire) ground the black module wire directly to the car chassis.
- 6) Using an awl or other pointed tool, punch two holes in the grommet that holds the wiring harness in the car. Then, feed the **BLUE** and **WHITE** wires through the holes and out to the lamp sockets.
- 7) Cut the **SIGNAL** wire that goes to the **MIDDLE** lamp, about 2 inches from the socket. Strip 1/2" of insulation off the **SIGNAL** wire that goes to the socket. Trim the **WHITE** module wire to length and strip about 1/2" of insulation. Using a wire nut, connect it to the socket wire. The dangling wire you just cut is still connected to the car's electrical system, so insulate it by covering it with electrical tape.
- 8) Cut the **SIGNAL** wire that goes to the **OUTSIDE** lamp, about 2 inches from the socket. If there are two signal wires on this socket, cut them both. Strip 1/2" of insulation off the **SIGNAL** wire(s) that go to the socket. Trim the **BLUE** module wire to length and strip about 1/2" of insulation. Using a wire nut, connect it to the socket wire. The dangling wire(s) you just cut is still connected to the car's electrical system harness, so insulate it by covering it with electrical tape.

Side Two

For the other side of the car, repeat the above steps using the other module. Note that the colors of the car wiring may be different on this side of the car.

Brake Light Sequencing

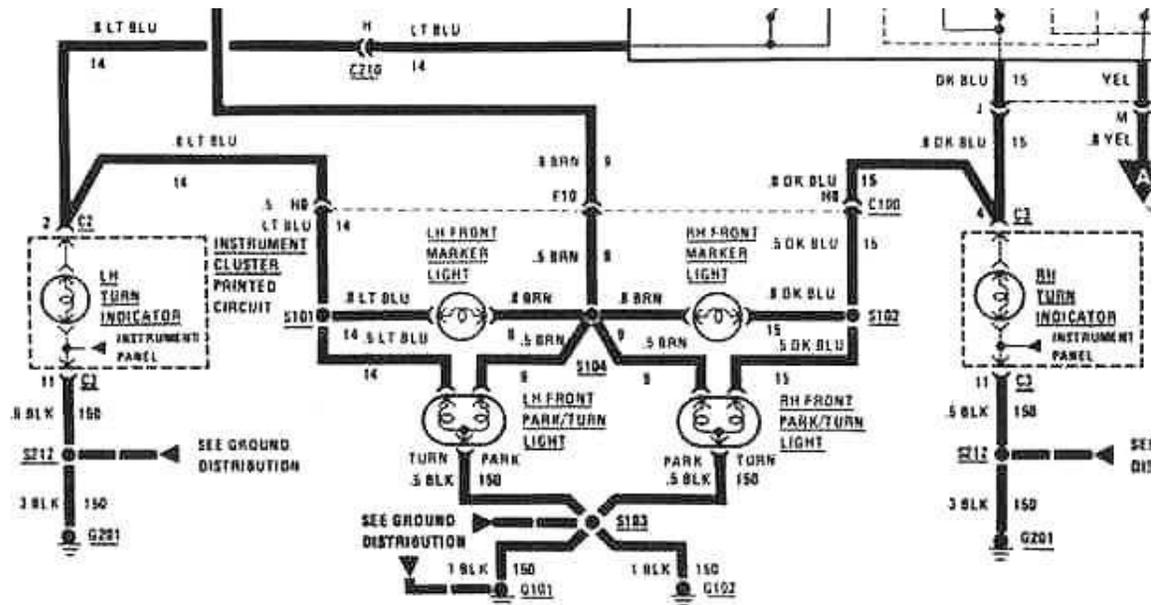
You can wire the modules to operate with or without brake light sequencing. As you received them, the modules are set up to "burst" (single sequence) the brake lights. That means, when you press the brake pedal, the brake lights sequence once, then stay on as long as you hold the pedal. When you release the pedal, the brake lights go off. This is the way most people have their cars set up. If this is what you want, then you are finished with the installation procedure, and you should go to the section **Testing And Troubleshooting**.

If you don't want the brake lights to sequence, then follow the section **Installing the Control Wires**.

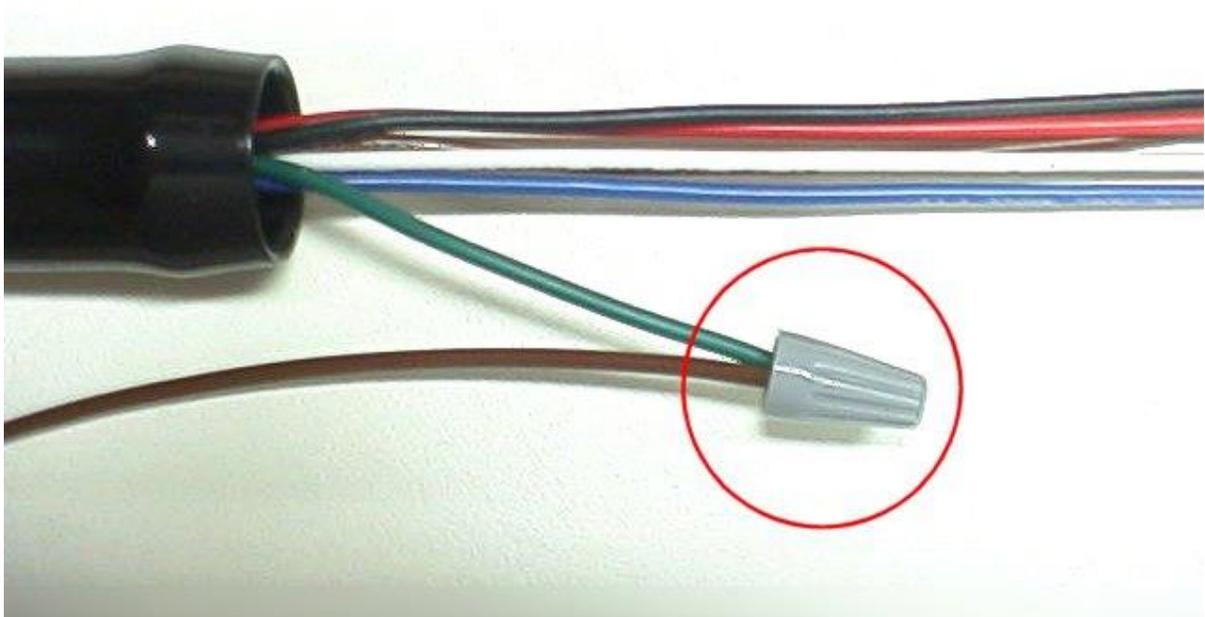
Installing the Control Wires (OPTIONAL)

If you do not want the single brake light burst (one sequence each time the brake pedal is pressed) read this section. It describes how to install the Control Wires so that the brake lights do not sequence. Your STS-1 kit comes with a length of **RED/DK BROWN** twin-lead wire. Run this paired wire from the tail lights to the instrument panel. Locate the wires that go to the turn signal indicators in the instrument panel (see example below). If you don't have a wiring diagram of the car, you may be able to find one in an automobile reference at the Library. Once you get the wires up to the dash, make the following connections:

Example of Turn Signal Wiring



- 1) At the instrument panel, separate the **PAIRED WIRES** about 8-10". Locate the wire that goes to the **RIGHT** turn signal indicator in the instrument panel. Cut this wire, strip both ends and connect them to the **RED CONTROL** wire using a wire nut.
- 2) Locate the wire that goes to the **LEFT** turn signal indicator in the instrument panel. Cut this wire, strip both ends and connect them to the **DK BROWN CONTROL** wire using a wire nut.
- 3) Back at the **sequencer modules**, find the **GREEN** wire with the wire nut.



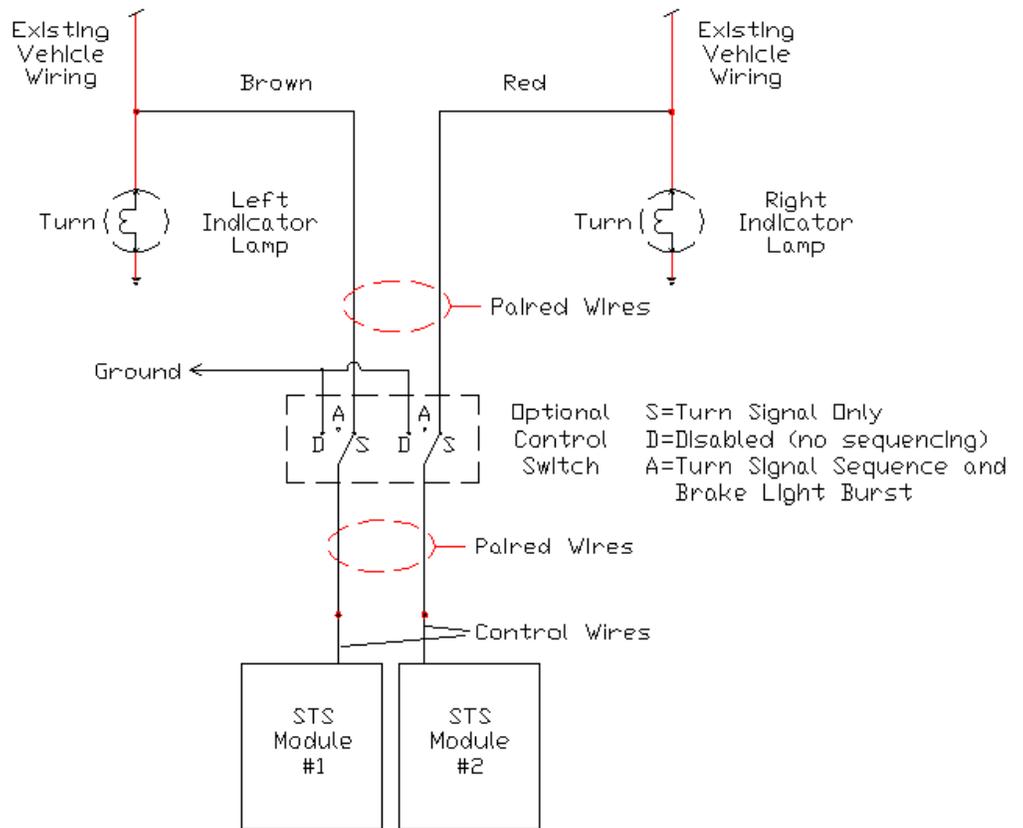
- 4) Connect the **RED CONTROL** wire to the **GREEN** wire of the **RIGHT** side module. Use a real crimping tool (not a pair of pliers) to make the connection.
- 5) Connect the **DK BROWN CONTROL** wire to the **GREEN** wire of the **LEFT** side module. Proceed to the section **Testing and Troubleshooting**.

Installing an Optional Control Switch (Optional)

You can quickly program the sequencing of the STS modules by installing an optional Control Switch. Obtain a Double Pole - Double Throw, Center-Off switch from your local Electronics Supply place and wire it up according to the diagram on the right.

Testing and Troubleshooting

Make sure the car, turn signals and hazards have been off for at least 5 minutes. **With the car running**, turn on the left signal and let it run for 1 minute. Turn on the right signal and let it run for 1 minute. If you have problems, follow the steps on the next page.



One or more lamps do not light, or are dimly lit	<ul style="list-style-type: none"> - Be sure you didn't pinch any of the wires on the frame or mounting studs. - Double check the connections at that lamp socket. - Install NEW light bulbs. If your car has 25,000 miles or more, the filaments are weak and could have failed during installation.
Lamps do not sequence	<ul style="list-style-type: none"> - Check the GROUND wire. Make sure the quick-splice is crimped all the way. - Be sure the RED wire from the module is connected to the signal wire in the harness.
The outside lamp doesn't light or lights only briefly	<ul style="list-style-type: none"> - The flasher may be going too fast to allow all the lamps to light up. Read the section on flashers. You may need to get a slower flasher or you may be able to modify the one you have. - You have an electronic flasher that monitors current flow. You may need to get a different flasher, or may need to add a lamp to maintain the proper current flow.

If Your Car has an Electronic Flasher

Some cars are equipped with electronic flashers that monitor the current going to the lamps. If one of the lamps burns out, it flashes at twice the normal speed to let the driver know that there's a problem. Adding a sequencer effectively removes one or more lamps from the flashing circuit. At twice the flash rate, the outside lamps never have a chance to come on. There are several ways around this. One is to dig into the electronic flasher module and modify the current sensing function, or remove it all together. For a nominal charge, we will modify your flasher for you (see the FAQ page on the web site). Another way is to replace the electronic device with a thermal/mechanical unit. Your local car parts dealer should be able to provide you with one that will fit your car, however this might not be possible since some cars use a combination turn/hazard flasher.

Finishing Up

Use the supplied tie wraps to bundle up the wires and to fasten the STS module to the wiring harness. When mounting the modules, make sure that they are oriented with the top up, and the wires pointing down. **DO NOT** over tighten the tie wraps that hold the modules to the harness. If you damage the outer cover, the unit may not function properly or moisture may enter the system and slowly destroy it.

When re-mounting the fixtures, **be careful not to pinch any of the wires on the frame or mounting studs**. This can cause a short and **WILL VOID THE WARRANTY!** Point the wire nuts "up" so that water doesn't collect in them.

