



## BX8811 Installation Instructions Tail Light Wiring Kit

The Tail Light Wiring Kit connects the tail, brake, and turn signal lights of the motorhome (or other tow vehicle) to the tail, brake, and turn signal lights of the towed vehicle.

**NOTE:** Some motorhomes have separate amber turn signals and red brake lights which requires the use of a tail light converter to change from a 4 wire system to a three wire system. A tail light converter is not supplied with the Tail Light Wiring Kit, but is available through your local supply center.

**WARNING:** Incorrect wiring may result in blown fuses, damaged wiring or computer systems, fire, or bodily injury. Automatic Equipment recommends installation of this kit by a trained professional. Automatic Equipment will not be responsible for any personal property damage, or bodily injury caused by incorrect wiring or misuse of this product.

### Tools Required

- Wire terminal crimper
- Wire stripper
- Small wire cutter
- Standard screw driver
- Electrical Tape
- 12 Volt D.C. continuity tester with needle point.

Check the parts in the kit against the parts list to familiarize yourself with each item.

### Parts List

Ref. No.	Qty.	Part No.	Description
1	1	294-0562	Wire Harness, 26 Ft., 4-wire
2	1	294-0560	9 Terminal Diode Block
3	1	294-0563	Wire Splitter, 14 Ga, Tinned
4	1	294-0250	Butt Connector, 16-14 Ga. Insulated
5	5	290-0297	Nylon Cable Tie, Beaded, 5"
6	9	201-0462	#6-32 x 1/2 Screw, Wire piercing washer

### Installation

- Starting in the engine compartment of the towed vehicle, run the 26 ft. harness through the firewall, under the drivers side door sill plate, under the back seat, and into the trunk area. Depending on the motorhome set up, the wire at the front of the engine compartment should be wired into either a 4-wire or 6-wire trailer plug that is mounted to the front of the towed vehicle.
- Three wiring diagrams are shown. Identify your type of vehicle wiring, then follow the wiring diagram which pertains to your vehicle.

**Type A:** Vehicles with standard red turn signals.

**Type B:** Vehicles with separate amber or red signals (Brake light wire splits before the lights).

**Type C:** Vehicles with separate amber or red signals (One brake light wire comes out of the other brake light socket).

**NOTE:** In Type A wiring systems only, access may be made under the dash where existing wires extend from the turn signal switch, down and rearward to the tail lights.

**NOTE:** In the wiring systems type B and C, the amber signals will only operate from the towed vehicles system. The red brake lights will function as turn signals when operated from the towing vehicle.

- DO NOT PRE-STRIP WIRES.** Start the wire piercing screws into the tail light connector.
- Make sure that the white wire is grounded to the vehicle chassis. It is also important to have a good ground on the towing vehicle.

Use a 12 Volt D.C. continuity lamp tester with a needle point prod to identify the "hot" wires which power the brake and tail lights. Ground one end of tester, and insert prod through the insulation of each wire to identify. At this point the 4-conductor cable should be cut to length, leaving enough slack to reach the tail light connector. **NOTE:** Vehicle lights must be on and the corresponding turn signals will have to be operating in order for wires to be "hot".

**NOTE:** When tapping into the wires under the dash, make sure to select the wires extending to the rear lights, not those extending to the front lights.

- After the tail light and turn signal wires are identified and marked, shut off the power then cut each wire. Place the wires from the front under their respective screws and tighten down. **DO NOT OVER TIGHTEN.** Place the wires to the back lights of the towed vehicle under their respective screws and tighten down. Do the same with the wires from the 26 ft. 4- conductor cable. (See wiring diagram for your type of car). If the wire is a light gage, the wire piercing screws may not penetrate the wire casing properly. In this instance, doubling the wire under the screw should allow it to make a good connection.

This completes wiring of the towed vehicle. Check to make sure the vehicle's tail, brake, and turn signal lights operate the same as they did prior to installation of the tail light connector and the 4-conductor cable. Electrical tape can be used to keep the diode block from shorting against part of the car.

## Connecting Two Vehicles Together

1. If the towing vehicle is already wired for towing check to see what type of existing socket it has, a mating plug will need to be purchased. Use the 12 volt lamp tester to identify each pin in the socket, and connect the 4-wire cable according to the wiring diagram color scheme.
2. If the towing vehicle is not wired for towing, a pigtail will need to be purchased and wired into the existing wiring of the towing vehicle as is described below. **NOTE:** Be sure there is sufficient length to reach the plug on the towed vehicle. **NOTE:** Self stripping wire tap connectors will also have to be purchased to "tap into" the existing wiring of the towing vehicle.
3. Connect the white wire from the new pigtail to a suitable ground. To connect the other three wires extending from the new pigtail to the existing towing vehicle wiring, it is necessary to identify the appropriate wires at the rear of the Towing vehicle. Use a 12 volt D.C. continuity lamp to identify the appropriate "hot" wires. The vehicles lights, and turn signals will have to be activated in order for there to be current traveling through the wires.

**NOTE:** If the towing vehicle is equipped with separate amber turn signals and red brake lights, use the same procedure to identify the brake light wire. A tail light converter (not included) is needed to convert the amber/red 4-wire system to the standard "red only" 3-wire system.

**NOTE:** A heavy duty flasher unit may be required in the towing vehicle to power the added circuit load of a towed vehicle.

This completes installation of the Tail Light Wiring Kit. To test system, simply plug towed vehicles pigtail into the towing vehicles socket, and turn on the towing vehicles lights. Test each turn signal and the brake lights. If lights do not work properly, there must be a loose connection, or a wiring error. Recheck to assure all connections were made correctly, especially the ground connections. If your third brake light blinks with a turn signal continue reading.

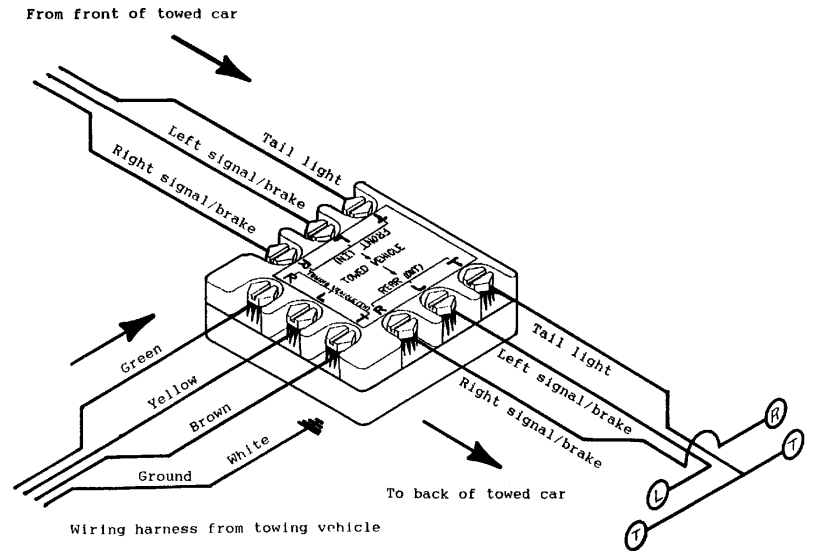
## Wiring Third Brake Light (Optional)

On some vehicles with separate amber turn signals, the third brake light or the light in the back window may blink with one of the turn signals while in the towing mode only. To prevent the third brake light from blinking, complete the following steps. **NOTE:** After completing these steps the third brake light will not function at all when in the towing mode and will function normally when driving the vehicle.

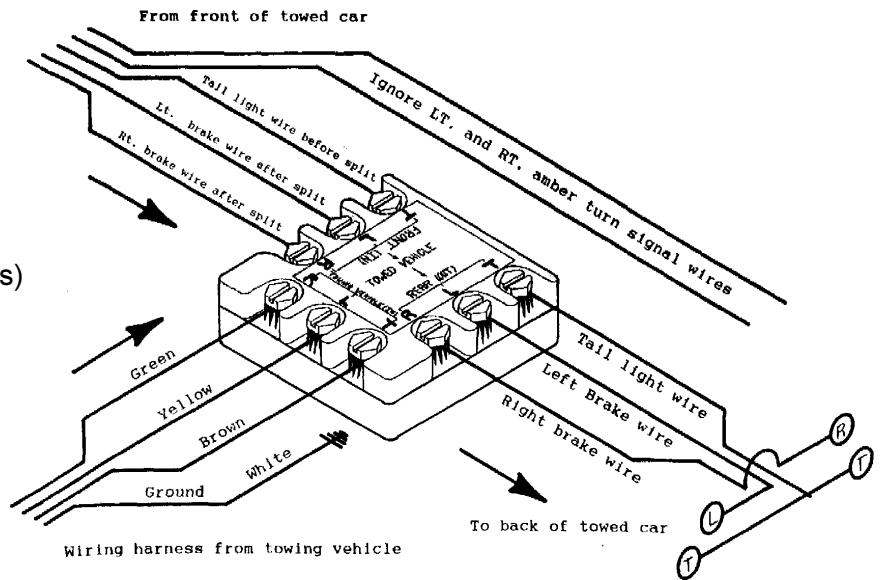
1. While applying power to the brake lights, Use a 12 Volt D.C. continuity tester to locate the "hot" wire feeding power to the positive side of the third brake light.
2. Relieve power to the brake lights and cut the "hot" wire located in step 1. **NOTE:** Be sure to leave enough wire extending from the positive side of the third brake light to allow for splicing. (About 6-12 inches) Use electrical tape to cover the other exposed end of the cut wire.
4. Obtain a piece of 16 gage stranded wire (available at most automotive stores) long enough to reach from the 9-screw diode block to the "hot" wire extending from the positive side of the third brake light.
5. Using a butt connector (available at most automotive stores) splice one end of the length of wire acquired to the wire extending from the positive side of the third brake light.
6. Place the other end of the wire under either the "L" or "R" wire piercing screw on the "from front of towed car" side of the diode block. **NOTE:** There is already a wire under both of these screws so this new wire must be placed on the opposite side of the screw as the existing wire. Do not stack the wires on top of each other under the wire piercing screw.
7. Be sure to test the entire system before towing.

**DEALER OR INSTALLER: BE CERTAIN THE USER RECEIVES ALL INSTRUCTION SHEETS.**

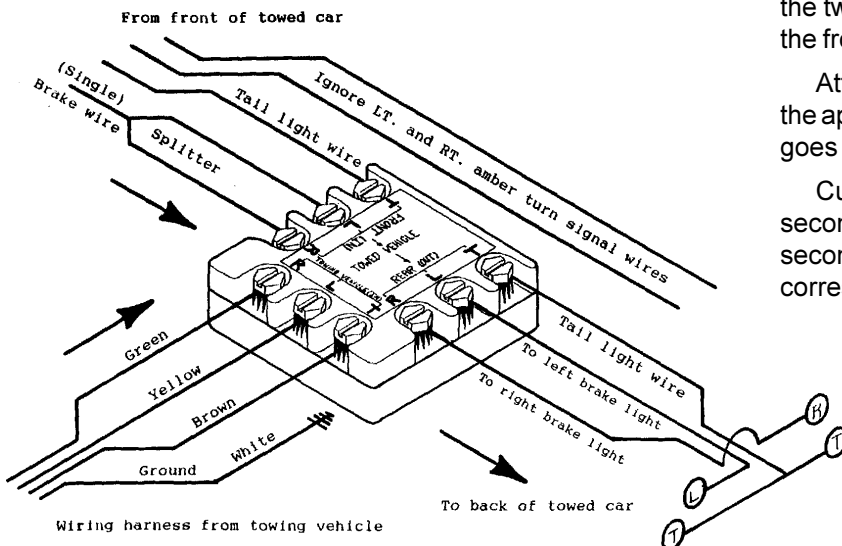
**DIAGRAM FOR TYPE A VEHICLES**  
(Vehicles with standard red turn signals)



**DIAGRAM FOR TYPE B VEHICLES**  
(Vehicles with separate amber turn signals)  
(Brake light wire splits before the lights)



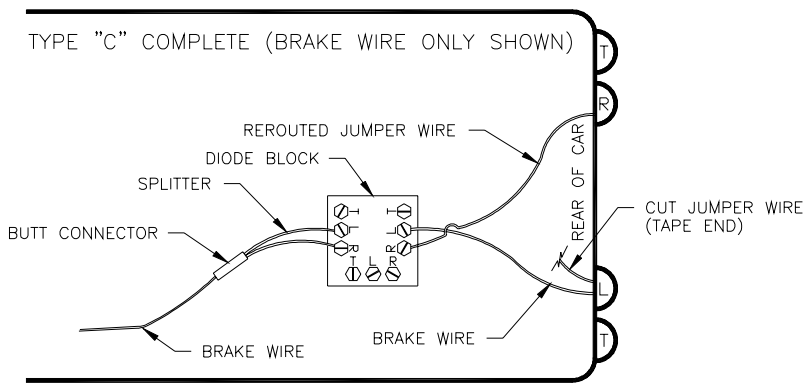
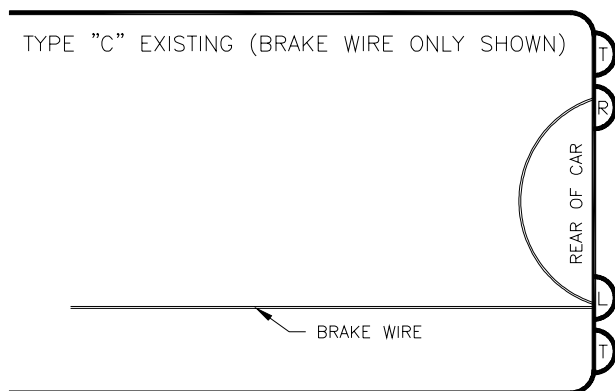
**DIAGRAM FOR TYPE C VEHICLES**  
(Vehicles with separate amber turn signals)  
(Power for one brake light comes from other lights socket)



Cut the main brake wire coming from the front, and strip it back approximately 1/4". Use the butt connector provided to connect the stripped wire and the single wire on the splitter, crimp with a wire terminal crimper. Attach the two ends of the splitter to the left and right screws on the front of the connector.

Attach the brake wire going to the back brake lights to the appropriate terminal, depending on whether the wire goes to the left or the right brake light first.

Cut the wire connecting the first brake light to the second brake light. Connect the wire that goes to the second brake light to the appropriate terminal, which will correspond with the side the second light is on.



**DIAGRAMS FOR TYPE C VEHICLES**

## Trouble Shooting

### PROBLEM - LIGHTS WORK CORRECTLY BUT DIM.

#### POSSIBLE CAUSES/SOLUTIONS

- A Bad, loose or faulty ground on either or both vehicles.
- B Short circuit in the system on either or both vehicles.
- C Motorhome (towing vehicle) alternator too small.
- D Motorhome (towing vehicle) wiring is too light to handle extra power requirements.
- E Motorhome (towing vehicle) may require a heavy duty flasher unit to handle the extra load.
- F Adding an additional ground between both vehicles may help.

### PROBLEM - OTHER LIGHTS DIM WHEN TURN SIGNALS ARE TURNED ON.

#### POSSIBLE CAUSES/SOLUTIONS

- A Feedback is present caused by a bad ground or short.
- B Motorhome (towing vehicle) has a weak battery. Replace or start motorhome and try again.
- C There could be a bulb on the towed vehicle that is bad or shorted out.

### PROBLEM - THIRD BRAKE LIGHT BLINKS WITH THE TURN SIGNALS.

#### POSSIBLE CAUSES/SOLUTIONS

- A Follow the optional wiring instructions of the third brake light.

### PROBLEM - BOTH TURN SIGNALS FLASH TOGETHER.

#### POSSIBLE CAUSES/SOLUTIONS

- A The diode block is wired into the system before the existing brake wires split. Move the block to a point after the existing brake wires are separate.
- B Type "C" vehicles must have the jumper wire removed from between the left and right brake lights.

### PROBLEM - ONLY ONE TURN SIGNAL WORKS.

#### POSSIBLE CAUSES/SOLUTIONS

- A Bad diode block.
- B The diode block is wired in after the existing wires split, therefore both wires from the back of the car must be connected separately to the diode block.

### PROBLEM - DIODE BLOCK IS WARM TO THE TOUCH.

#### POSSIBLE CAUSES/SOLUTIONS

- A Under normal use the diode block will become warm to the touch. This is not a cause for alarm.