



Time Tested • Time Proven

Brake-Lite Relay

part number 88400

Installation Instructions

All specifications are subject to change without notice

ROADMASTER, Inc. 6110 NE 127th Ave. Vancouver, WA 98682 800-669-9690 Fax: 360-735-9300 www.roadmasterinc.com

WARNING

Read the instructions before installing the kit components. Failure to understand how to install the Brake-Lite Relay could result in property damage, personal injury or even death.



Kit components

- Brake-Lite Relay with color-coded wiring and attachments – (3) blue 16-14 gauge butt connectors and (1) ring terminal
- fuse tap with attached blue 16-14 gauge butt connector
- (1) 10-amp fuse
- (4) wire ties
- 5/16" self-tapping screw

Required tools

- combination wire crimper/stripper
- volt meter
- drill with 5/16" hex bit



If the vehicle starts with an ignition key, use the 'A' instructions

CAUTION

Do not use the 'A' instructions to install the Brake-Lite Relay in a Ford vehicle with a 'neutral tow' kit. Instead, use the 'B' instructions (beginning on page 3). Otherwise, the neutral tow kit will not disengage the transmission for towing, which may cause severe non-warranty transmission damage.

Similarly, if the vehicle is equipped with a push button ignition, use the 'B' instructions. If you use the 'A' instructions on a vehicle with a push button ignition, the engine will not start after the installation is complete.

Note: these instructions apply to the majority of vehicles. However, applications vary. Some vehicles may require additional components or alternative wiring.

Note: If you are using the 'A' instructions, the blue wire attached to the relay is not used.

1. Locate the towed vehicle's brake light switch and, with a volt meter, find the 'cold' side of the brake light switch wire.

Note: ROADMASTER has identified the color of many vehicles' brake light switch wires. Look under 'Vehicle Specific Info' at roadmasterinc.com.

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IMPORTANT NOTICE!

Safety Definitions

These instructions contain information that is very important to know and understand. This information is provided for **safety** and to **prevent equipment problems**. To help recognize this information, observe the following symbols.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in property damage, serious personal injury or even death.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in property damage, or minor or moderate personal injury.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTE

Refers to important information and is placed in italic type. It is recommended that you take special notice of these items.

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Confirm that you have found the correct wire – 1) the volt meter will not register voltage unless the brakes are applied; and 2) when the brakes are applied the volt meter will register 12 VDC+.

CAUTION

Do not rely on a test light to identify the brake light switch wire – other wires may also energize a test light. You must use a volt meter to confirm that you have found the correct wire – only the brake light switch wire will register 12 VDC+ in the above test.

The Brake-Lite Relay will be attached to the wire you have selected. If the relay is attached to the incorrect wire the vehicle's cruise control, anti-lock brake system or other electronic components may be damaged or disabled, causing non-warranty damage to the vehicle's electrical system.

2. Remove the vehicle's brake light fuse, located in the fuse panel.

CAUTION

Failure to remove the brake light fuse from the fuse panel may cause the vehicle's theft deterrent system or other electrical system indicators to be activated if the brake pedal is depressed during the installation. This may require non-warranty repair to the vehicle.

3. Cut the brake light wire, a few inches downstream from the 'cold' side of the brake light switch.
4. Attach this wire and the brake monitor wire from the supplemental braking system to the brake signal output (Figure 1).

Note: for Even Brake, connect the brake signal output to terminal 1 in the ICX transmitter.

5. With the attached blue butt connector, connect the black wire from the Brake-Lite Relay to the other end of the brake light wire (Figure 1).
6. Identify a fuse that is ONLY powered when the ignition

key is in the "run" position and OFF when in the "tow" position. Pull the fuse.

WARNING

Do not remove any fuse connected to the air bag circuit. Air bag deployment can result. Consult the vehicle owner's manual to determine fuse assignments for other safety systems.

Note: make certain this fuse is not part of a "retained accessory power" circuit – with this feature, the vehicle's electronics continue to function normally for about ten minutes after the ignition is turned off. Then the electronics will no longer function, which shuts off power to the brake light switch.

Insert the fuse you just pulled into the slot closest to the fuse blades (Figure 2), then insert the fuse tap into the empty slot in the fuse panel (Figure 1).

Using the attached blue butt connector, connect the red wire from the Brake-Lite Relay to the wire from the fuse tap (Figure 1).

7. With the attached ring terminal and included 5/16" self-tapping screw, connect the white wire from the Brake-Lite Relay to any good chassis ground. To avoid grounding problems, attach the wire directly to the frame.

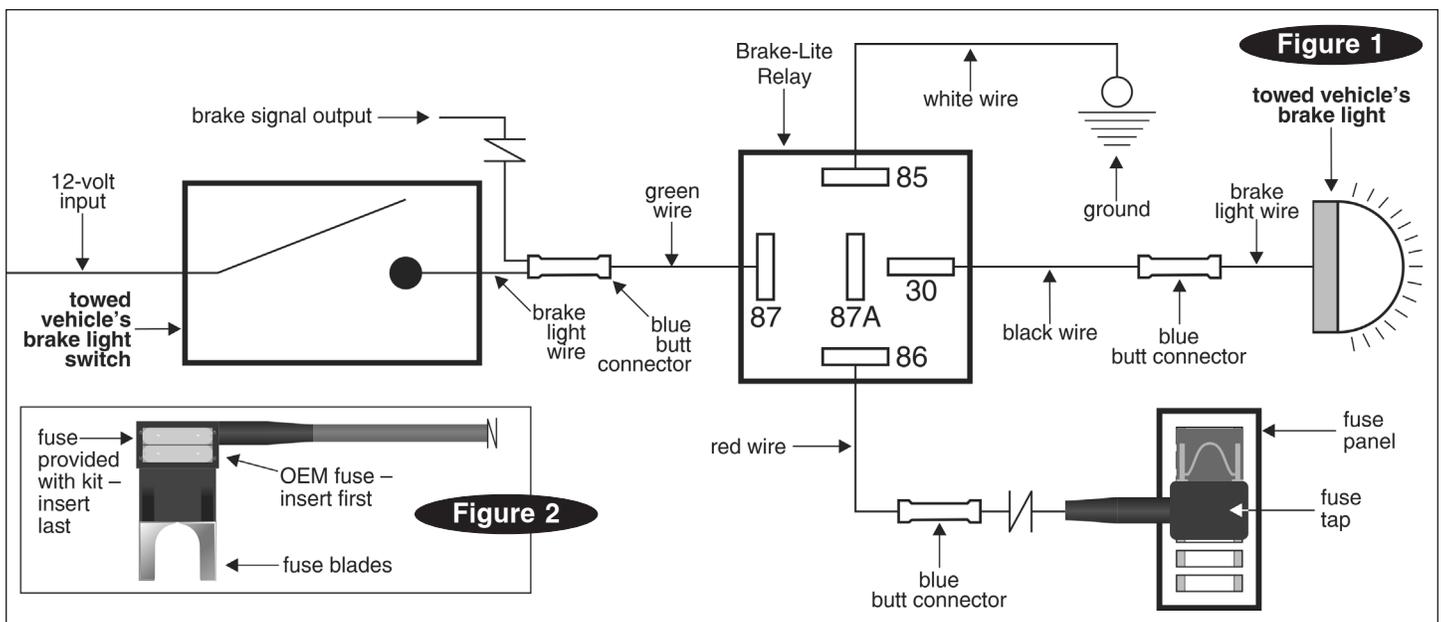
CAUTION

The towed vehicle must be grounded to the motorhome. If it is not, the Brake-Lite Relay will not operate. Additionally, failure to establish a good ground between the towed vehicle and motorhome could cause aftermarket accessories to malfunction, damage to both vehicle's electrical systems and other consequential damage.

8. Secure the Brake-Lite Relay in place, using one or more of the included wire ties.

Ensure that the wiring will not present an obstacle or hazard to the driver of the vehicle, or interfere with the operation.

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eration of the vehicle. Use one or more of the included wire ties, if necessary, to secure the wiring out of the way.

9. Reinstall the brake light fuse, removed in step 2.
10. Insert the provided 10-amp fuse into the fuse tap (Figure 2).
11. Test to ensure that the Brake-Lite Relay has been properly installed:
 - When the towed vehicle's engine is running, the brake

lights illuminate normally and the driver will be able to shift from 'park' to 'drive' when the brake pedal is depressed.

- When the towed vehicle's ignition key is in the 'tow' position, the brake lights do not illuminate when the towed vehicle's brake pedal is depressed.



If the vehicle has a push button ignition, use the 'B' instructions

1. Use the 'B' instructions if...
 - ...the vehicle is equipped with a push button ignition.
 - ...you will install the relay in a Ford vehicle with a 'neutral tow' kit.

Note: this installation requires parts and materials which are not supplied – one 12-10 gauge butt connector, one 16-14 gauge butt connector and several feet of brown 14 gauge wire.

Additionally, one diode (ROADMASTER part number 790) may be required. See step 10.

Note: applications may vary. Some vehicles may require additional components or alternative wiring.

Note: If you are using the 'B' instructions, the green wire attached to the relay is not used.

2. Locate the towed vehicle's brake light switch and, with a volt meter, find the 'cold' side of the brake light switch wire.

Note: ROADMASTER has identified the color of many vehicles' brake light switch wires. Check for your vehicle at fitmaster.roadmasterinc.com.

Confirm that you have found the correct wire – 1) the volt meter will not register voltage unless the brakes are applied; and 2) when the brakes are applied the volt meter will register

12 VDC+.

CAUTION

Do not rely on a test light to identify the brake light switch wire – other wires may also energize a test light. You must use a volt meter to confirm that you have found the correct wire – only the brake light switch wire will register 12 VDC+ in the above test.

The Brake-Lite Relay will be attached to the wire you have selected. If the relay is attached to the incorrect wire the vehicle's cruise control, anti-lock brake system or other electronic components may be damaged or disabled, causing non-warranty damage to the vehicle's electrical system.

3. Remove the vehicle's brake light fuse, located in the fuse panel.

CAUTION

Failure to remove the brake light fuse from the fuse

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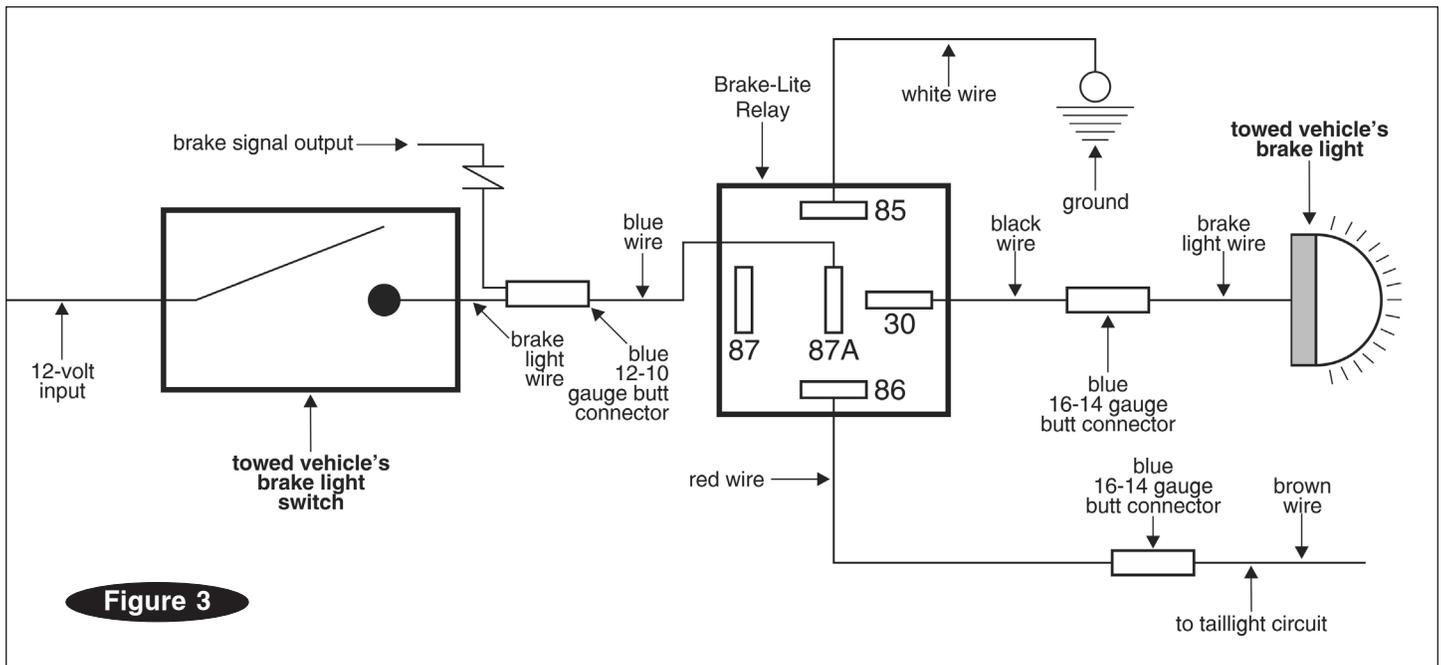


Figure 3

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panel may cause the vehicle's theft deterrent system or other electrical system indicators to be activated if the brake pedal is depressed during the installation. This may require non-warranty repair to the vehicle.

4. Cut the brake light wire, a few inches downstream from the 'cold' side of the brake light switch.

5. Attach this wire and the brake monitor wire from the supplemental braking system to the brake signal output (Figure 3).

Note: for Even Brake, connect the brake signal output to terminal 1 in the ICX transmitter.

6. With the attached blue 16-14 gauge butt connector, connect the black wire from the Brake-Lite Relay to the other end of the brake light wire (Figure 3).

7. With a volt meter, identify the wire conducting the taillight signal in the towed vehicle's aftermarket tow light harness. (Typically, this wire is color coded brown.)

8. Extend and connect the red wire to the aftermarket tow light harness, as shown in Figure 4.

Note: additional wire (not included) may be required.

9. With the attached ring terminal and included 5/16" self-tapping screw, connect the white wire (terminal 85) to any good chassis ground. To avoid grounding problems, attach the wire directly to the frame.

CAUTION

The towed vehicle must be grounded to the motorhome. If it is not, the Brake-Lite Relay will not operate.

Additionally, failure to establish a good ground between the towed vehicle and motorhome could cause aftermarket accessories to malfunction, damage to both vehicle's electrical systems and other consequential damage.

Note: typically, vehicles equipped with 'bulb and socket' sets may not be grounded properly. Make certain that the white ground wire from the 4-wire aftermarket tow light harness is grounded to the vehicle chassis. Otherwise, the Brake-Lite Relay will not operate.

10. Reinstall the brake light fuse, removed in step 3.

11. Turn on the headlights. Test for voltage at the red wire of the relay (terminal 86). If voltage is present, install a diode, as shown in Figure 4.

! WARNING

A diode must be installed if the test above determines that one is required. Failure to install the diode will prevent the brake lights from functioning during normal driving.

12. Secure the Brake-Lite Relay in place, using one or more of the included wire ties.

Ensure that the wiring will not present an obstacle or hazard to the driver of the vehicle or interfere with the operation of the vehicle. Use one or more of the included wire ties, if necessary, to secure the wiring out of the way.

13. Test to ensure that the Brake-Lite Relay has been properly installed:

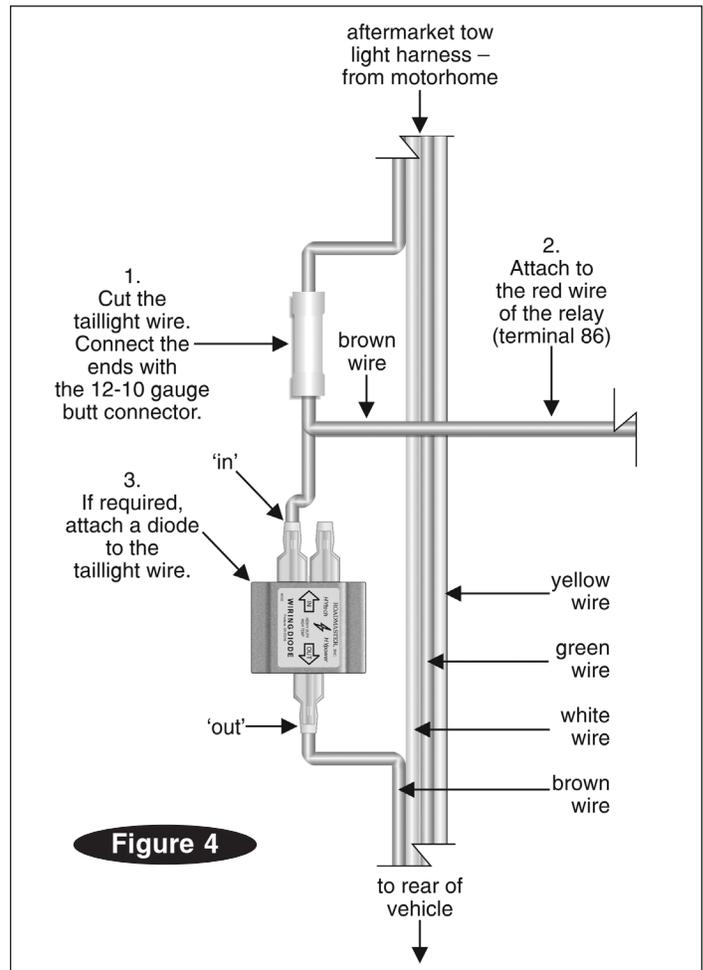


Figure 4

• With the towed vehicle disconnected from the motorhome, verify that it will start with the brake pedal depressed and that the towed vehicle's brake lights function normally.

• With the vehicle connected to the motorhome and the motorhome taillights illuminated, the towed vehicle's brake lights do not function when the towed vehicle's brake pedal is depressed. **If the parking lights are not turned on in the motorhome, the Brake-Lite Relay will not operate.**

14. If this product is professionally installed, **INSTRUCT THE CUSTOMER to turn on the motorhome parking lights when towing.** The Brake-Lite Relay will NOT function unless the motorhome parking lights are on.

Note: the towed vehicle will not start if the motorhome taillights are turned on.

CAUTION

After the Brake-Light Relay has been installed, always turn off the motorhome taillights before starting the towed vehicle. Otherwise a dashboard error message, as well as other consequential, non-warranty damage may occur.