



Time Tested • Time Proven

851409-06 03/23

Two-diode universal wiring kit part number 150 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

Parts

- (1) 4-wire wiring harness, 27 feet in length
- (1) 4-wire power cord, 6 feet in length
- (2) Hy-Power™ diodes
- (6) 12-10 gauge butt connectors (yellow)
- (1) 16-14 gauge ring terminal
- (1) 3-foot length of split loom (11) wire ties

Purpose

This kit uses a system of diodes to wire early-model vehicles, which require two diodes only, for towing.

WARNING

A total of four diodes is required to properly wire all late model vehicles. Unless these additional diodes are attached, the towed vehicle's electrical system will be severely damaged. Other consequential damage may also occur.

Note: in the unlikely event both the motorhome's and the towed vehicle's wiring have separate brake and turn signals, two additional diodes are required. See the 'separate to separate' schematic at www.roadmasterinc.com.

WARNING

Read the instructions before installing the kit components, and wire the towed vehicle according to the instructions and illustrations. Failure to understand how to install this product could result in an electrical malfunction or other collateral or consequential damage.



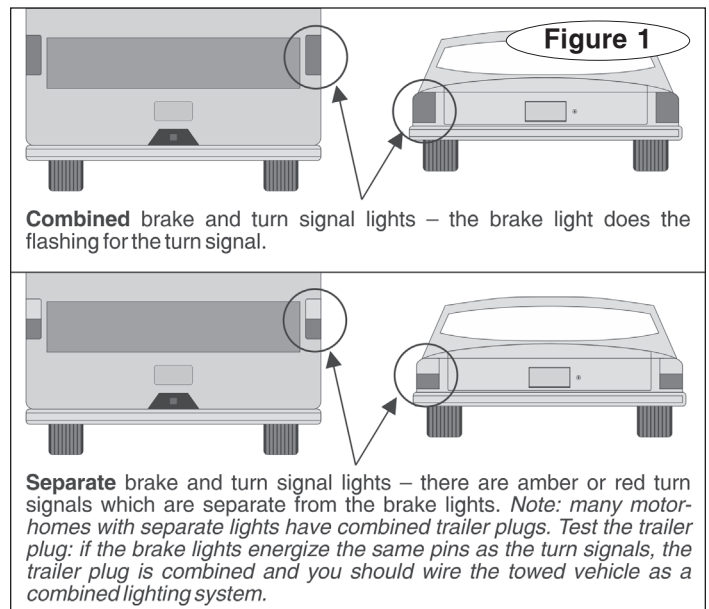
Step A

Identify the vehicles' lighting systems

1. The vehicle will be wired for towing according to the type of brake and turn signals in both vehicles. There are two types – combined or separate (Figure 1). In a **combined** system, the brake light does the flashing for the turn signal; in a **separate** system, there are amber or red turn signal lights which are separate from the brake lights.

Note: if the motorhome has a separate lighting system, a 3-to-2 converter must be installed in order to use this kit. A 3-to-2 converter converts a separate system to a combined system.

continued on next page



IMPORTANT NOTICE!

Safety Definitions

Statements in these instructions identified as follows are of special significance.

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.

continued from preceding page
bined system.

Many late-model motorhomes come with converters already installed – test for this before installation: if the motorhome’s trailer plug energizes the same pins for both brake lights and turn signals, then a 3-to-2 converter is already installed and the motorhome should be treated as combined.

If a converter is needed, install ROADMASTER’s Brite-Lite™, part number 732.

Step B

Attach the wiring harness

1. Attach one end of the wiring harness to the electrical socket at the front of the towed vehicle. Connect the wires according to the instructions that came with the electrical socket.

Step C

Route the wiring harness

1. You will route the wiring harness to the rear of the vehicle, then split it and attach it to the back of both taillight assemblies.

Before you begin, plan a route that avoids the possibility of fraying or melting the wiring against moving parts, sharp edges, the fuel lines or hot components. (If the OEM wiring harness is accessible, consider routing the harness alongside it.)

2. Route the wiring harness. Where appropriate, use a section of the included split loom to protect the wires; use one or more of the included wire ties to secure the wiring in place.

WARNING

Route the wiring harness to avoid moving parts, sharp edges, the fuel lines or hot components such as the engine or exhaust system.

Wiring exposed by moving parts, sharp edges or hot components may cause a short circuit, which can result in damage to the vehicle’s electrical system as well as other, consequential damage.

Wiring which is attached in close proximity to the fuel lines may ignite the fuel.

3. At the rear of the vehicle, find a suitable point to gain access to the vehicle’s taillights.

4. Route the wiring harness to the closest taillight assembly and then over to the other taillight assembly.

Trim the excess wiring. (Save the brown wire; you may use it in step D4.) Then separate the bonded wires in the harness and, depending on the lighting systems in both vehicles (see page three), peel back the appropriate wire(s) to the other side.

Step D

Wire the vehicle for towing

1. Expose the wires behind both taillight assemblies. (It may be necessary to remove the taillight assemblies from the exterior of the vehicle to gain access.)

2. With a circuit tester, identify the brake light, taillight and

turn signal wiring.

3. Wire the diodes according to the appropriate schematic (on page three).

4. Use the brown wire you saved in step C4 to jump the diodes attached to the taillights, as shown in the wiring schematics.

Note: use the yellow female spade connector on the diode you will use to jump the brown wire.

5. Use the included ring terminal and a self-tapping screw to attach the ground wire.

Note: to avoid grounding problems, attach the wire to a good chassis ground, preferably directly to the frame.

CAUTION

Refer to the owner’s manual before attaching the ground wire. Some manufacturers stipulate that ground wires must be attached at specific locations.

Significant damage to the vehicle’s electrical system, as well as other consequential, non-warranty damage will occur if the ground wire is not attached at one of these points.

6. If it was necessary to drill a hole, seal it with silicone sealant after you have routed the wires through.

WARNING

Attach the diodes as close to the towed vehicle’s lights as possible, to avoid interaction with other circuits which may be tied into the center brake light, the running lights, the turn signals or the brake light wires. Attaching the diodes farther away may cause the towed vehicle’s lights to work improperly, as well as cause damage to other electrical components in the vehicle.

CAUTION

Failure to attach the diodes as indicated in the wiring schematics will create a backfeed through the vehicle’s electrical system, which will allow electrical current from the towed vehicle to disrupt one or both of the vehicles’ electrical systems.

Additionally, if a supplemental braking system is installed it may not operate, or may only operate intermittently.

7. Test each of the circuits to confirm that the lighting functions correctly.

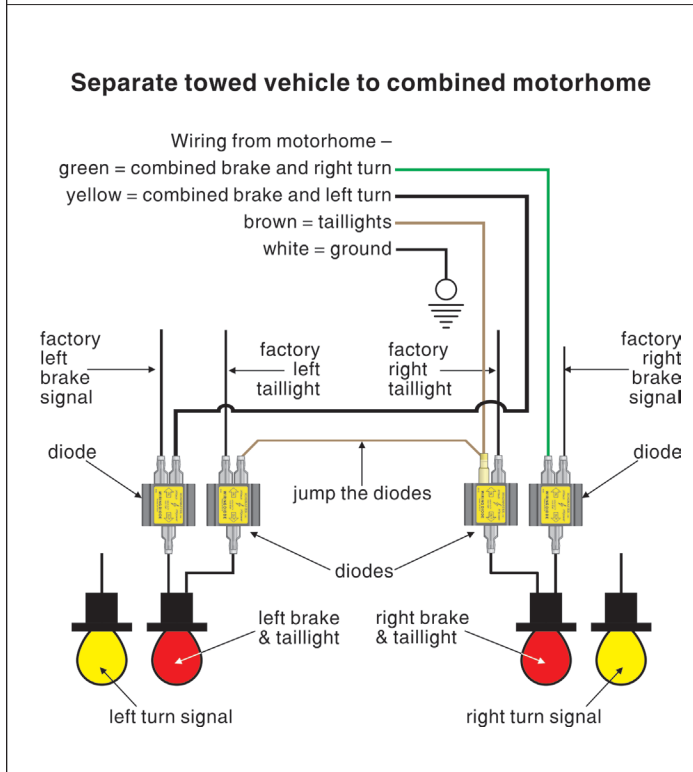
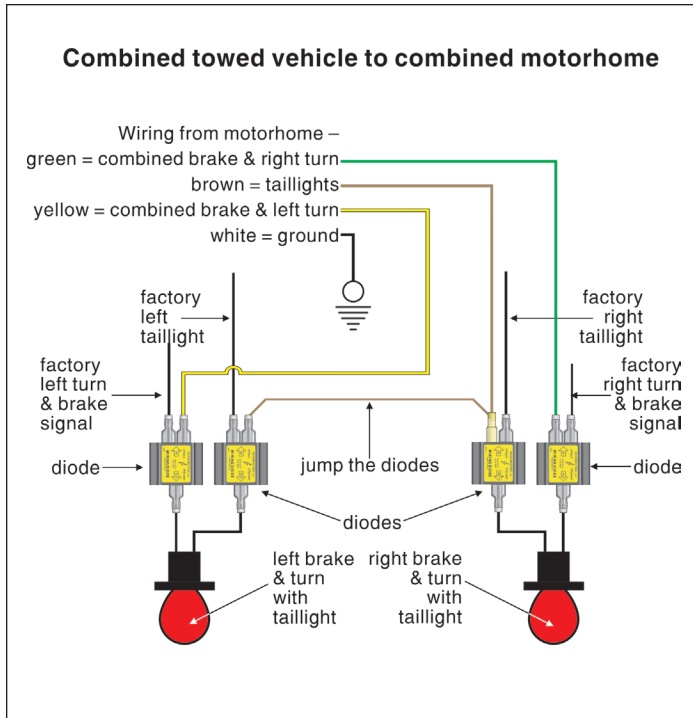
Wiring schematics

CAUTION

The color codes listed below are the most commonly used. However, color coding is not standard with all manufacturers.

Use the color codes for initial reference only; confirm the function of each wire with a circuit tester.

The towed vehicle's lighting system may not function, or function improperly, if the wires are not connected correctly. Cross-wiring may also cause a short circuit, a blown fuse or other non-warranty damage.



Don't do the Fuse Limbo...

How about if you never had to spend another minute with your face on the floor mat, gazing up into a black void, hunting for a miniscule piece of plastic playing hide and seek?

You don't have to.

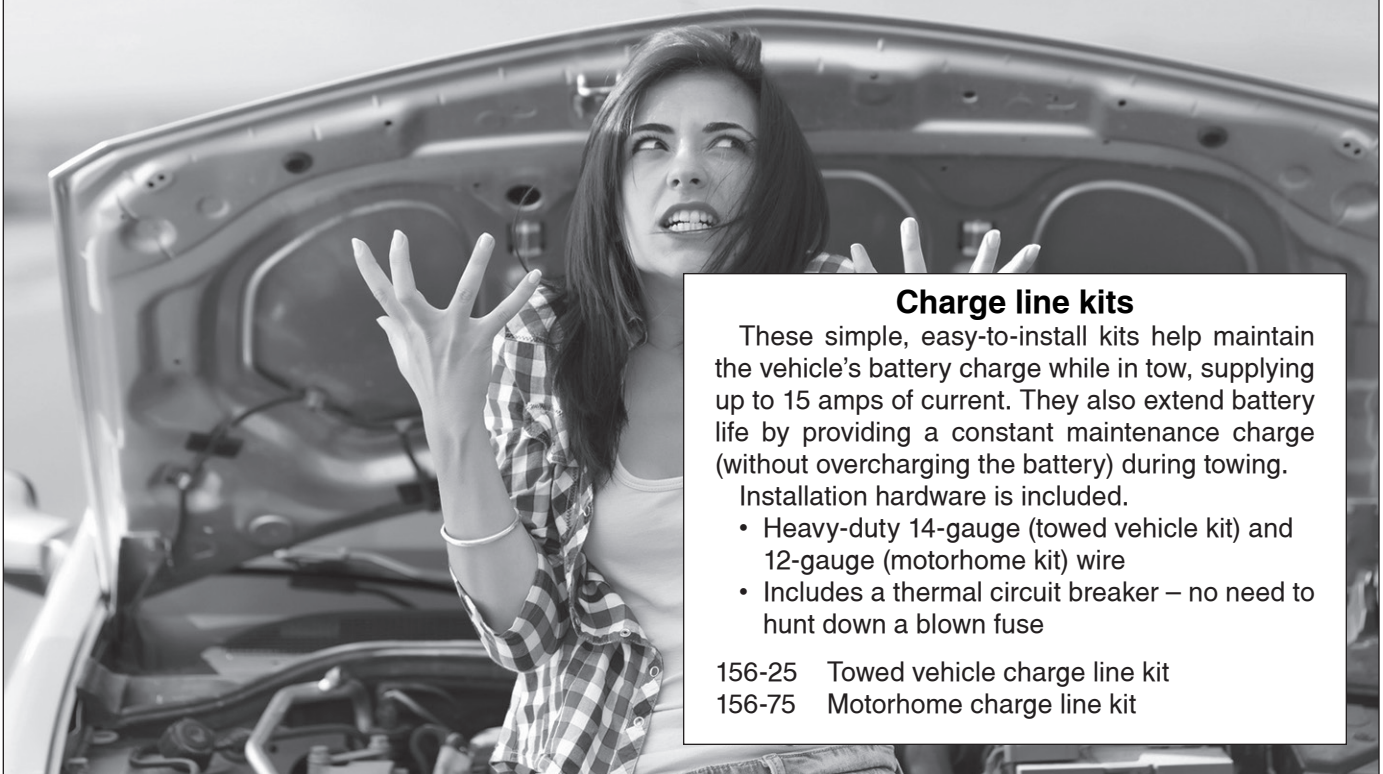
FuseMaster eliminates the necessity of having to remove a fuse for towing, then having to reinsert it for driving. After it's installed you simply flip a switch to accomplish the same task.

There are several FuseMasters which, collectively, fit most vehicles which must have fuses removed for towing. For the fit list, click the 'Vehicle Specific Info' tab at roadmasterinc.com or scan the QR code.



...Just flip a switch!

No more dead battery!



Charge line kits

These simple, easy-to-install kits help maintain the vehicle's battery charge while in tow, supplying up to 15 amps of current. They also extend battery life by providing a constant maintenance charge (without overcharging the battery) during towing.

Installation hardware is included.

- Heavy-duty 14-gauge (towed vehicle kit) and 12-gauge (motorhome kit) wire
- Includes a thermal circuit breaker – no need to hunt down a blown fuse

- 156-25 Towed vehicle charge line kit
- 156-75 Motorhome charge line kit