ROADMASTER

Towing and Suspension Solutions

Economy wiring kit

part number 152

Installation Instructions

855073-00 05-13

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
(4) Hy-Power™ diodes
(1) 10-12 gauge butt connector (yellow)
(1) 6-14 ring terminal
(1) 3-foot length of split loom (11) wire ties

Note: although this kit works in the vast majority of vehicles, there are a few in which it does not. Before beginning, make certain this kit can be installed – check under 'Vehicle-Specific Info' at www.roadmasterinc.com.

⚠ WARNING

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

CAUTION

Do not install this kit in a 1999-2003 Ford Windstar, 2004 and newer Ford Freestar, or in any vehicle using a "low side switching" system. A low side switching system will prevent the taillights from functioning properly when they receive power from the motorhome.

Use either magnetic tow lights or a taillight bulb and socket kit to wire these vehicles for towing.

Step A

Identify the vehicles' lighting systems; determine if additional components are required

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. In a **combined** system (Figure 1), the brake light does the flashing for the turn signal; in a **separate** system (Figure 1), there are amber or red turn signal lights which are separate from the brake lights.

Note: if the motorhome has a separate system, use a test light to see if a 3-to-2 converter has been installed – if the same circuit energizes both the turn signals and the brake lights, a converter has been installed.

The 3-to-2 converter will, in effect, change the brake and turn signals from separate to combined.

2. Determine if additional components are required –

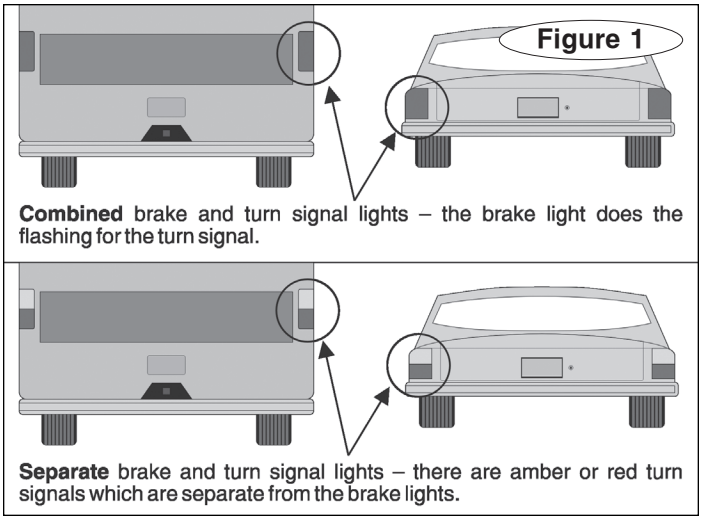
This kit contains all the components for most towed vehicle-motorhome combinations. However…

• …if the motorhome has a separate lighting system and the towed vehicle has a combined lighting system, a Brite-Lite™ 3-to-2 wiring converter (ROADMASTER part number 732, see page four) is required.

• …if both the motorhome and the towed vehicle have separate lighting systems, there are two options:

First option – install a Brite-Lite 3-to-2 wiring converter

continued on next page



Combined brake and turn signal lights – the brake light does the flashing for the turn signal.

Separate brake and turn signal lights – there are amber or red turn signals which are separate from the brake lights.

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
(part number 732) on the motorhome. Use the schematic labeled “Combined towed vehicle to separate motorhome” (on page three) to wire the vehicle.

Second option – In order to maintain separate brake and turn signals, the power cord must have at least five circuits. There are a number of power cords available for this purpose, such as 7-to-6-wire Flexo Coil, part number 146-7 (see page four).

Two additional diodes (part number 792, see page four) and one 10 ga. x .250 female spade connector are also required for this option.

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. The wiring harness will be routed to the rear of the vehicle, then split and attached 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, plan a route 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.

Failure to follow these instructions may cause property damage, personal injury or even death.

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 in both taillight assemblies. (It may be necessary to remove the taillight assemblies from the exterior of the vehicle to gain access to the wiring.)

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) that matches your combination of vehicles.

4. Use the brown wire you saved in step C4 to jump the diodes attached to the taillights, as shown in the 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 (not included) 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.

Failure to follow these instructions may result in property damage, personal injury or even death.

CAUTION

Failure to attach the diodes as indicated in the wiring diagrams 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.

⚠ WARNING

Wire the towed vehicle according to the instructions above, and the appropriate schematic. Improperly wiring the towed vehicle may cause an electrical malfunction or other damage, which may result in property damage, personal injury or even death.

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

Wiring schematics

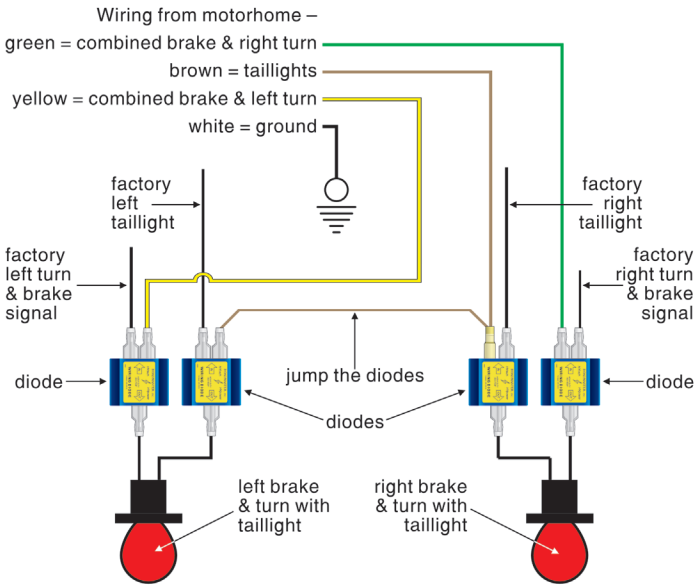
CAUTION

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

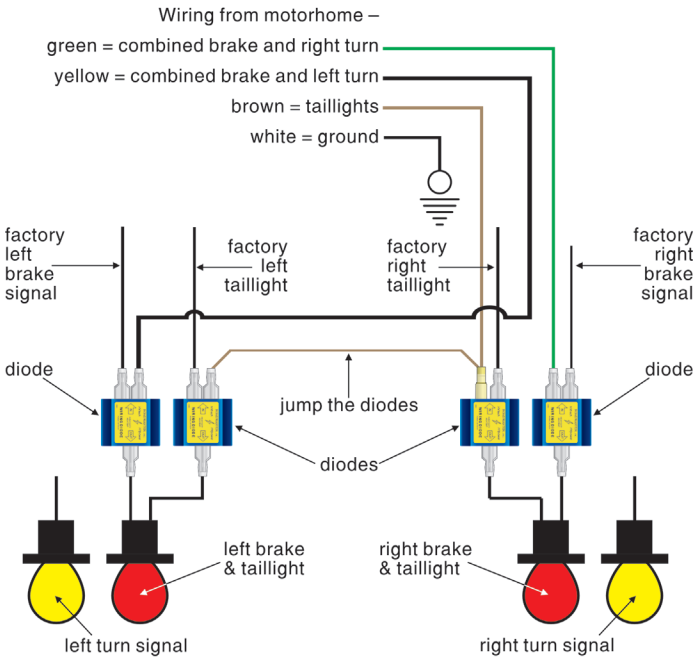
Use the color codes for initial reference only; confirm the function of each wire with a circuit tester.

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.

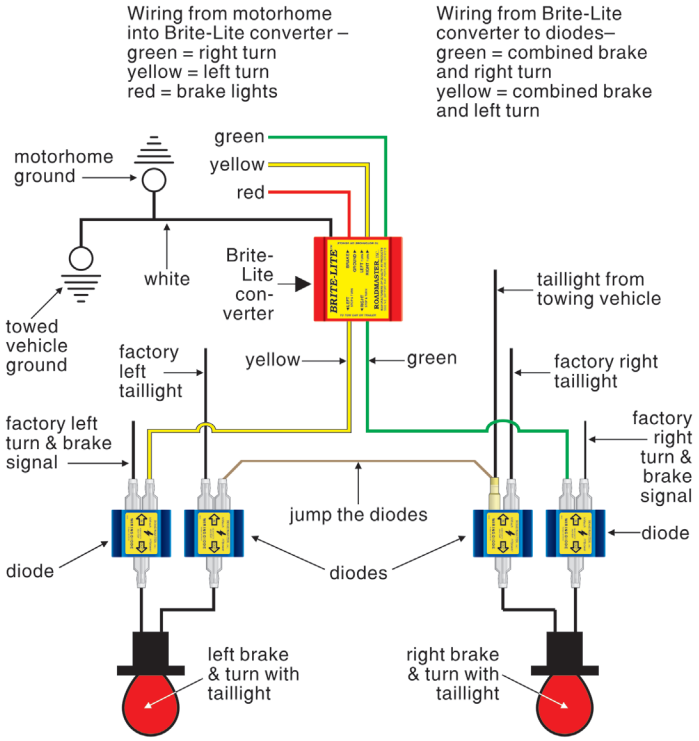
Combined towed vehicle to combined motorhome



Separate towed vehicle to combined motorhome



Combined towed vehicle to separate motorhome



Separate towed vehicle to separate motorhome