



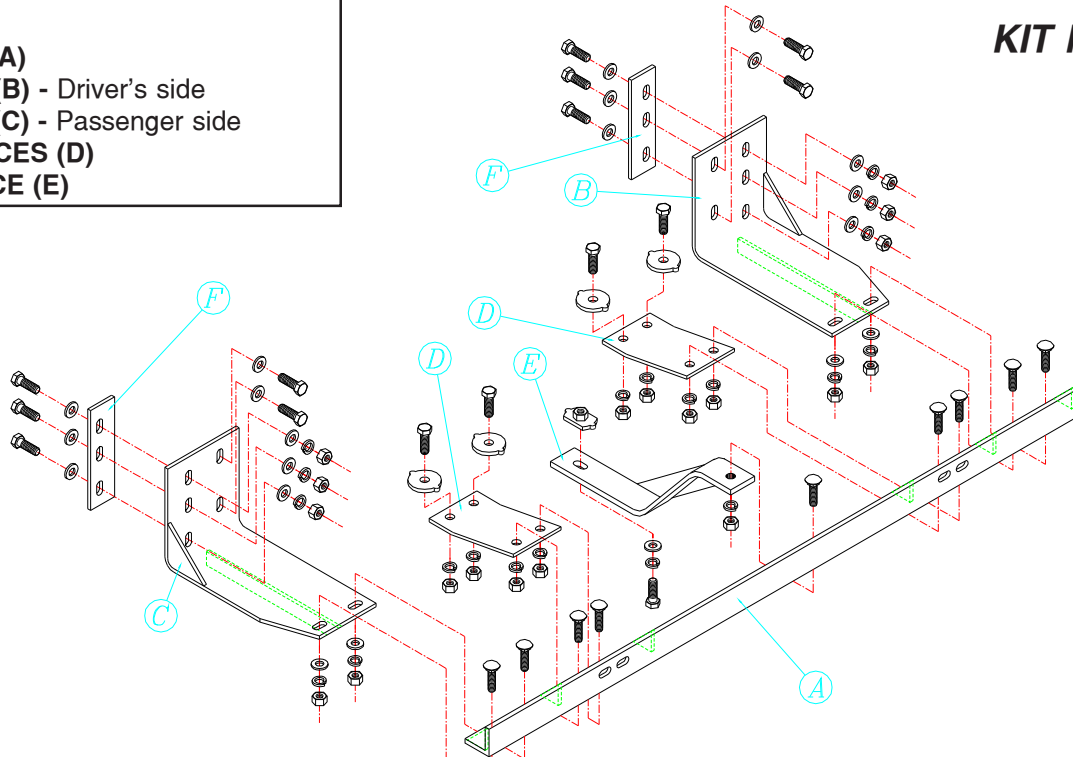
MOUNTING BRACKET KIT INSTALLATION INSTRUCTIONS

ROADMASTER, Inc. 6110 NE 127th Ave. Vancouver, WA 98682 1-800-669-9690 fax 360-735-9300 www.roadmasterinc.com

PARTS LIST:

- 1- FACE PLATE (A)
- 1- MAIN BRACE (B) - Driver's side
- 1- MAIN BRACE (C) - Passenger side
- 1- BUMPER BRACES (D)
- 1- CENTER BRACE (E)

KIT NO. 213-1



01/16/01

IMPORTANT: All brackets **must** be assembled with all the bolts left loose for final adjustment and positioning (before tightening) unless otherwise instructed. All bolts **must** be torqued for proper strength. If more than one bolt is used per fastening point, the diagram may only show one.

- Use flat washers over all slotted holes
- Use lock washers on all fasteners

ROADMASTER Limited Warranty, including One-Year Conditional Warranty Text and Product Registration Card, in Carton.

WARNING

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

- Installation of most mounting brackets requires moderate mechanical aptitude and skills. We strongly recommend professional installation by an experienced installer.
- The installer must read the instructions and use all bolts and parts supplied. Failure to do so could result in loss of the towed vehicle.
- Use Loctite® Red on all bolts used for mounting this bracket.
- Do not use this document for custom fabrication, as it may not show all parts or structural components. Custom fabrication or an attempt to copy this bracket design could result in loss of the towed vehicle.
- Every 3,000 miles, the owner must inspect the fasteners for proper torque, according to the bolt torque requirements chart on the last page of these instructions. The owner must also inspect all mounts and brackets for cracks or other signs of fatigue every 3,000 miles. Failure to do so could result in loss of the towed vehicle.
- The owner must check the vehicle manufacturer's instructions for the proper procedure(s) to prepare the vehicle for towing. Some vehicles must be equipped with a transmission lube pump, an axle disconnect, driveline disconnect or free-wheeling hubs before they can be towed. Failure to properly equip the vehicle will cause severe damage to the transmission.
- If running changes were made by the vehicle manufacturer after this bracket was designed, some bolts or other fasteners in the hardware pack may no longer be the correct size. It is the installer's responsibility to verify that the bracket is securely fastened to the vehicle and fitted with the correct hardware to account for these changes. Failure to securely fasten the bracket could result in loss of the towed vehicle.
- If the towed vehicle has been in an accident, it must be properly repaired before attaching the bracket. Do not install the bracket if any structural frame damage is found. Failure to repair the damage could result in the loss of the towed vehicle.
- Some motorhome chassis have such a tight turning radius that you can damage your motorhome, towed vehicle, tow bar or bracket while turning sharply. Before getting on the road, test your turning radius in an empty parking lot. Turning too sharply could result in non-warranty damage to towing system, motorhome and/or towed vehicle.
- Do not back up with the towed vehicle attached or non-warranty damage will occur to your towing system, motorhome and/or towed vehicle.
- The safety cables must connect the towing vehicle to the towed vehicle frame to frame, with the cables crossed, with enough slack for sharp turns. Refer to the cable instructions for proper routing. Failure to leave enough slack in the safety cables, or failure to connect the safety cables frame to frame, will result in the loss of the towed vehicle.
- This bracket is designed for use with ROADMASTER tow bars and ROADMASTER adaptors only. Using this bracket with other brands, without an approved ROADMASTER adaptor, may result in non-warranty damage or injury.
- Upon final installation, the installer must inspect the bracket to ensure adequate clearance, particularly around hoses, air conditioner lines, radiators, etc., or non-warranty damage to the towed vehicle will result.
- This bracket is only warranted for the original installation. Installing a used bracket on another vehicle is not recommended and will void the warranty.



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- Important:** please use all supplied bolts and parts and read all instructions carefully before beginning this installation. The majority of questions you may have can be answered within the text, and proper installation will ensure safe and secure travel. Now, begin the installation. Remove the bumper and bumper supports from the van. Separate the skin from the core.
- Remove the 10mm nuts that hold the bumper to the bumper supports. Set these parts aside, saving all fasteners.
- Using the bolts that fasten the bumper supports to the van, bolt the main braces (B&C) to the existing holes that the bumper supports are bolted to - (See drawing).
- Using the main brace as a template, drill the three unused holes all the way through the body metal to 1/2" diameter. Now using six of the provided 1/2" x 1 1/2" bolts and predrilled backing plate (F), bolt the main braces (B&C) and backing plate from the rear (nuts to the front of the van). Tighten these bolts at this time (see torque chart).
- Remove the inside two factory bolts from each main brace. Then bolt the bumper mounts to their original location by sandwiching the main braces between the bumper mount and the van's firewall. Tighten these bolts at this time according to the torque chart below.
- Reinstall the bumper core making sure that the bumper is properly aligned.
- Find the center of the bumper core and measure outward 15" marking the bottom of the bumper with a felt marking pen. Repeat this procedure outward from the center in the opposite direction.
- With the notched end to the bumper, using the bumper braces (D) as a template, line up the outer hole in each bumper brace with the marks on the bottom of the bumper. Center them and mark the inner holes on the bumper with a felt pen. Drill a 1/2" diameter hole in the center of each mark. Bolt the bumper braces loosely to these holes using four 1/2" x 1 1/2" bolts and plate washers provided. Plate washers are to be inside the bumper.
- Replace the bumper skin and trim to clear the bracket where necessary.
- Bolt the face plate (A) to the bumper braces and to the main braces using eight 1/2" x 1 1/2" carriage bolts provided.
- Bolt the center brace (E) to the center hole of the face plate with a 1/2" x 1 1/2" bolt provided. Insert a 1/2" x 1 1/2" carriage bolt with a 1/2" plate washer down through the large hole in the bottom of the motor mount. Bolt the remaining end of the center brace to this bolt.
- Tighten ALL bolts according to the torque chart shown below.
- Bolt the tow bar to the mounting bracket according to the instructions provided with the tow bar.

HARDWARE LIST:

- 15- 1/2" X 1 1/2" BOLTS
- 19- 1/2" NUTS
- 21- 1/2" FLAT WASHERS
- 20- 1/2" LOCK WASHERS
- 4 - 1/2" PLATE WASHERS
- 9 - 1/2" X 1 1/2" CARRIAGE BOLTS
- 2 - 1/4" X 2" X 7 1/4" SLOTTED BACKING PLATES
- 1 - 2" THREADED CLIPPED PLATE WASHER

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BOLT TORQUE REQUIREMENTS

Note: The torque values represented below are intended as general guidelines. Torque requirements for specific applications may vary. Roadmaster does not warrant this information to be accurate for all applications and disclaims all liability for any claims or damages which may result from its use.

| STANDARD BOLTS | | | METRIC BOLTS | | | METRIC BOLTS | | |
|----------------|-------|-------------|--------------|-------|-----------------------|--------------|-------|------------------------|
| Thread Size | Grade | Torque | Thread Size | Grade | Plated/Unplated | Thread Size | Grade | Plated/Unplated |
| 5/16 | 5 | 13 ft./lb. | 8mm-1.0 | 8.8 | 20 ft./lb. 18 ft./lb. | 12mm-1.25 | 8.8 | 70 ft./lb. 65 ft./lb. |
| 3/8 | 5 | 23 ft./lb. | 8mm-1.25 | 8.8 | 19 ft./lb. 18 ft./lb. | 12mm-1.5 | 8.8 | 66 ft./lb. 61 ft./lb. |
| 7/16 | 5 | 37 ft./lb. | 10mm-1.25 | 8.8 | 38 ft./lb. 36 ft./lb. | 12mm-1.75 | 8.8 | 65 ft./lb. 60 ft./lb. |
| 1/2 | 5 | 56 ft./lb. | 10mm-1.5 | 8.8 | 37 ft./lb. 35 ft./lb. | 14mm-2.0 | 8.8 | 104 ft./lb. 97 ft./lb. |
| 5/8 | 5 | 150 ft./lb. | | | | | | |

All illustrations and specifications contained herein are based on the latest information available at the time of publication approval. ROADMASTER, INC. reserves the right to make changes at any time without notice in material, specification and models or to discontinue models.