



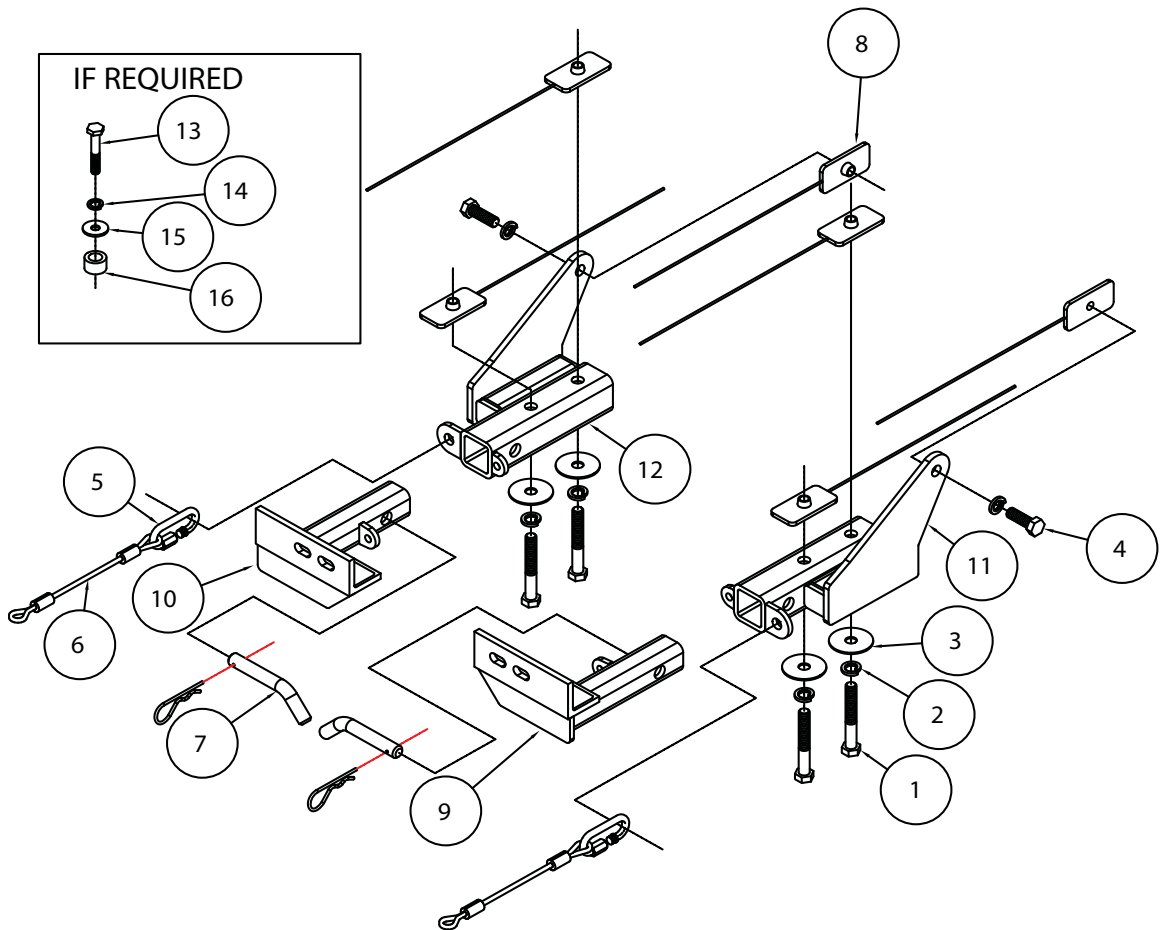
# MOUNTING BRACKET KIT INSTALLATION INSTRUCTIONS

**KIT# 4431-1**

05/01/13  
KS

ROADMASTER, Inc. 6110 NE 127th Ave. Vancouver, WA 98682 360-896-0407 fax 360-735-9300 www.roadmasterinc.com

ROADMASTER, INC.



ITEM	QTY	NAME	MATERIAL
1.....4.....		1/2" x 3 1/2" BOLT.....	350103-00
2.....6.....		1/2" LOCK WASHER.....	350309-00
3.....4.....		1/2" FLAT WASHER.....	350308-00
4.....2.....		1/2" x 1 1/2" BOLT.....	350095-00
5.....2.....		QUICK LINK.....	200008-00
6.....2.....		8" SAFETY CABLES.....	650648-8
7.....2.....		5/8" DRAW PIN W/ CLIP.....	357035-00
8.....6.....		3/16" x 1 1/2" x 3" THREADED BACKING PLATE W/ 12" ROD.....	C-002006
9.....1.....		DRIVER SIDE ARM.....	C-002250
10.....1.....		PASSENGER SIDE ARM.....	C-002251
11.....1.....		DRIVER SIDE RECEIVER.....	C-002252
12.....1.....		PASSENGER SIDE RECEIVER.....	C-002253
13.....2.....		10mm x 1.5 x 60mm BOLT.....	356107-00
14.....2.....		10mm LOCK WASHER.....	355715-00
15.....2.....		3/8" FLAT WASHER.....	350304-00
16.....2.....		1" O.D. x 0.188 WALL x 5/8" SPACER.....	A-000156



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This bracket kit is one of our XL series, which allows the visible front portion of the brackets to be easily removed (Fig.A and Fig.B). The kit consists of the main receiver brace, removable front braces and a hardware pack.

The main receiver brace mounts to the front frame and bumper core on each side. The removable front braces insert into the receivers on each side and are secured with draw pins.

Before starting the installation, lay out the kit components in order, as they will be used. This will give you a visual idea of how the components work, and will also confirm that everything is present and accounted for.



Fig.A



Fig.B

**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.
- 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.
- Roadmaster manufactures many styles of brackets. If your bracket has removable arms, they must be removed before driving the vehicle, unless the arms can be pinned or padlocked in place. If not secured, the arms could vibrate out, resulting in non-warranty damage or personal injury.
- 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.
- 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.
- 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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1. **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. **For models without tow hooks:** trim the bumper on each side as shown to allow clearance for the main receiver braces, following the indents in the splash shield to aid in the trimming (Fig.C). Figure D shows the completed trimming. **For Raptor models:** proceed to the supplemental instructions found at the end of this document to remove the bumper and skid plate. **For all other models:** proceed to step 2.



2. Working on the driver's side only, remove two 15mm (head) bolts and the two-holed backing plate attaching the tow hook to the bottom of the frame rail (Fig.E). The tow hook will not be replaced. *Note:* retain the tow hook and hardware for reinstallation in case the bracket is ever removed.

3. Place one of the supplied  $\frac{1}{2}$ " lock washers and fender washers over one of the  $\frac{1}{2}$ " x  $3\frac{1}{2}$ " bolts, and bolt up through the rear hole of the main receiver brace (Fig.F). Place the main receiver brace behind the forward splash shield, aligning the holes with the existing holes in the frame rail (Fig.G). Bolt up through the main receiver brace, tow hook mount and into the frame rail using the  $\frac{1}{2}$ " x  $3\frac{1}{2}$ " bolt (Fig.H).





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4. Place one of the supplied  $\frac{3}{16}$ " x  $1\frac{1}{2}$ " x 3" threaded backing plates with rod over the bolt you just installed in the previous step (Fig.I). *Note:* use Loctite® Red on all bolts used for mounting this bracket.

5. Place one of the  $\frac{3}{16}$ " x  $1\frac{1}{2}$ " x 3" threaded backing plates with rod inside the frame rail and over the inside upper mounting point of the main receiver brace. Place a  $\frac{1}{2}$ " lock washer over one of the supplied  $\frac{1}{2}$ " x  $1\frac{1}{2}$ " bolts, and bolt through the outside of the frame rail and into the backing plate (Fig.J).



6. Place one of the supplied  $\frac{1}{2}$ " fender washers and lock washers over one of the  $\frac{1}{2}$ " x  $3\frac{1}{2}$ " bolts and bolt up through the front hole in the main receiver brace, tow hook mounting hole, the frame rail and into a  $\frac{3}{16}$ " x  $1\frac{1}{2}$ " x 3" threaded backing plate with rod.

7. Torque the two bolts in the bottom of the frame rail and then the top nuts using the bolt torque requirements found at the end of these instructions.

8. Repeat steps 2 through 7 for the passenger side of the vehicle.

9. Using a pair of pliers, break the wires off all the backing plates (Fig.K). **For Raptor models:** return to the supplement to finish replacing the bumper and skid plate.



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10. Insert the removable front bracket arms into the front receiver braces.
11. Attach the 8" safety cables with the cable connectors (Q-Links) to the front of the receiver braces (Fig.L).
12. Attach the ends of the safety cables to the tow vehicle's safety cables.
13. Install the tow bar to the mounting bracket according to the manufacturer's instructions.



## 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

Thread Size	Grade	Torque
5/16.....	5.....	13 ft./lb.
3/8.....	5.....	23 ft./lb.
7/16.....	5.....	37 ft./lb.
1/2.....	5.....	56 ft./lb.
5/8.....	5.....	150 ft./lb.

### METRIC BOLTS

Thread Size	Grade	Plated / Unplated
8mm-1.0 .....	8.8 .....	20 ft./lb. 18 ft./lb.
8mm-1.25 .....	8.8 .....	19 ft./lb. 18 ft./lb.
10mm-1.25 .....	8.8 .....	38 ft./lb. 36 ft./lb.
10mm-1.5 .....	8.8 .....	37 ft./lb. 35 ft./lb.

### METRIC BOLTS

Thread Size	Grade	Plated / Unplated
12mm-1.25 .....	8.8 .....	70 ft./lb. 65 ft./lb.
12mm-1.5 .....	8.8 .....	66 ft./lb. 61 ft./lb.
12mm-1.75 .....	8.8 .....	65 ft./lb. 60 ft./lb.
14mm-2.0 .....	8.8 .....	104 ft./lb. 97 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.



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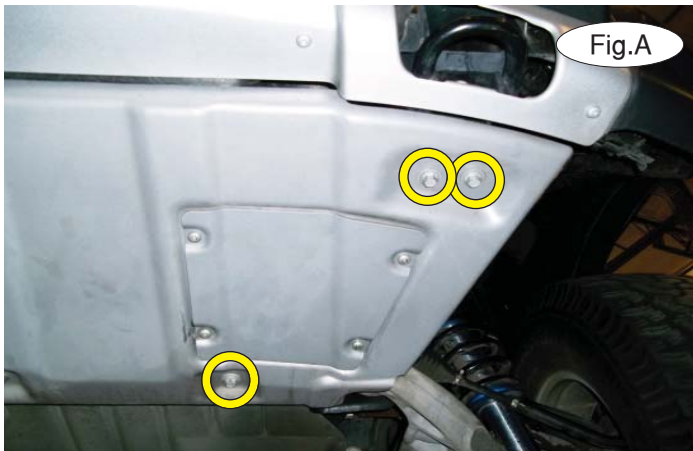
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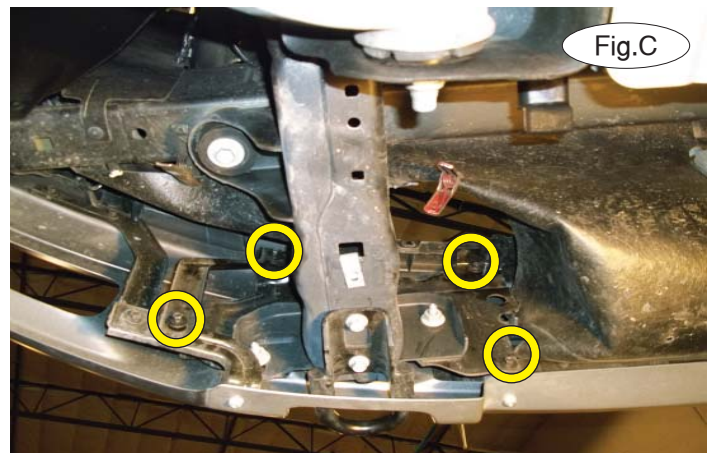
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## Supplemental Instructions for Raptor Models

This supplement provides instructions on removing the bumper and skid plate.



1. On each side, remove three 15mm (head) bolts attaching the skid plate to the frame (Fig.A – driver's side).
2. On each side, remove one 15mm (head) bolt attaching the skid plate mounting bracket to the frame rail (Fig.B).



3. Remove three plastic fasteners attaching the splash shield to the bumper (Fig.C).
4. On each side, remove four 10mm (head) bolts attaching the bumper and support bracket to the frame rail (Fig.D).
5. Pull down and forward to release the bumper (Fig.E).



**Now, return to step 2 in the regular installation instructions to install the bracket.**



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6. Reinstall the bumper by reversing steps 3 through 5 in this supplement.

7. Working on one side at a time, place one of the supplied 5/8" x 1" x .188 wall pipe spacers between the frame and the skid plate mounting bracket you removed in step 2 of this supplement. Now, using the supplied 10mm x 1.5 x 60mm bolt, 10mm lock washer and 3/8" washer, bolt up through the bracket, through the spacer and into the bracket mount. The yellow arrow in Figure F indicates the location of the spacer.

8. Finish reinstalling the skid plate by reversing step 1 in this supplement.

9. Due to manufacturing variances, it may be necessary to trim a small amount on the fascia to allow clearance for the main receiver brace. If this is the case, use the yellow line in Figure G as a guide for trimming the tab in the grille opening.