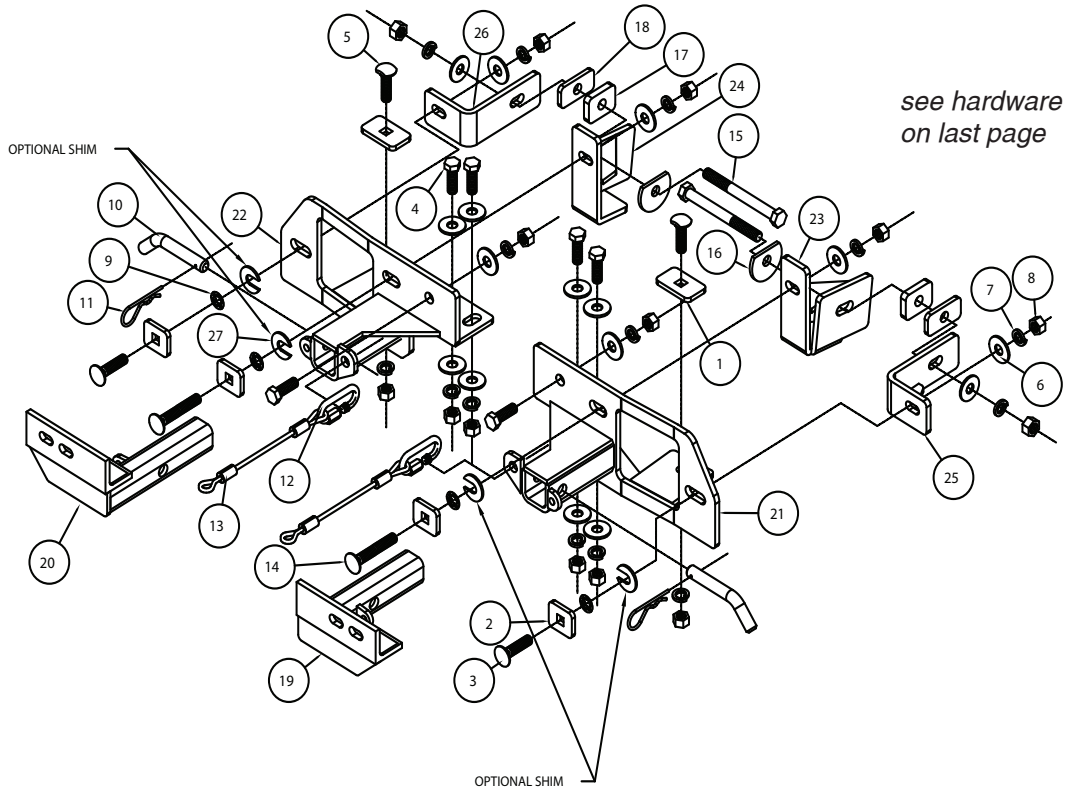
MOUNTING BRACKET KIT INSTALLATION INSTRUCTIONS

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

KIT NO. 477-1



see hardware list on last page

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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 warranteed 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. This bracket kit is one of our XL series, which is designed to be partly removable. The kit consists of the main receiver braces, front braces and a hardware pack. The main receiver braces mount behind and through the front bumper fascia to the front frame and tow loop mounts. Start by laying the kit out according to the illustration. This will give you a visual idea of how the kit installs and also confirm that the kit components are present and accounted for.
2. Remove the front bumper and fascia (four 19mm shoulder nuts).
3. Remove the existing front tow hooks and mounting bolts (15mm head). These components will not be replaced. Retain all hardware in case the bracket is ever removed. *Note:* some models may not be equipped with tow hooks.
4. The front of the frame and the bumper mounts should be exposed and in full view at this time. Notice the front slots in the front of the frame on each side, then find the large slotted holes about 2½" back in the bottom of each frame tube. Locate two ½" x 1¾" carriage bolts with one side of the head narrowed about a 1/8". These should fit through the front slot if held at an angle. Fishwire these bolts and ¼" x 1½" x 2½" backing plates through the front of the frame on each side into the bottom slots in each rectangular frame rail.
5. Working on one side at a time, hold a receiver brace over the front of the frame and bolt it in place using a ½" nut and lock washer on the previously installed bolt. Make sure the bumper mounting slots line up with the receiver brace slots. *Note:* due to frame variances, the holes may need to be enlarged.
6. To the inside of the frame rail, place one of the supplied 3/8" x 1½" x 2" backing plates over the pre-existing hole and then the inside rear brace over the backing plate. Bolt through both with a ½" x 5" bolt and ½" clipped washer. On the outside of the frame rail, place one of the supplied ¼" x 1¼" x 2½" backing plates and then the outside rear brace. Finish with a ½" flat washer, lock washer and nut.
7. Now, bolt through the three tow hook mounting holes located on the inner mounting of the brace with three ½" x 1½" bolts, flat washers, lock washers and nuts.
8. Repeat steps 5 through 7 for the remaining side.
9. Torque all mounting bolts to the specifications below.
10. Prepare the bumper for remounting by removing the existing four mounting bolts and substituting two ½" x 2½" carriage bolts and ¼" x 1½" x 1¾" backing plates on the outside mounts and two ½" x 4" carriage bolts and ¼" x 1½" x 1¾" backing plates on the inside mounts. Secure the bolts in the bumper with the provided push nut bolt retainers.
11. Replace the bumper and bolt it in place using ½" flat washers, lock washers and nuts. Slotted shim washers are provided to aid in bumper alignment. Normally, one or two washers may be needed between the bumper and the lower bumper mounting point.
12. Align and torque all mounting bolts to the specifications below.
13. Insert the front braces into the receiver tubes and secure with 5/8" draw pins and 1/8" spring pins.
14. Install the tow bar according to the manufacturer's instructions.
15. Attach one end of the included 10" safety cables to the safety cable tab on each side of the receiver brace with the included cable connectors. Connect the other end to the tow vehicle's safety cables and the tow bar.

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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

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.

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HARDWARE LIST

ITEM	QTY	MATERIAL	PART #
1	2	1/4" x 1 1/2" x 2 1/2" BACKING PLATE	A-000084
2	4	1/4" x 1 1/2" x 1 3/4" BACKING PLATE	A-000196
3	2	1/2" x 2 1/2" CARRIAGE BOLT	350369-00
4	6	1/2" x 1 1/2" BOLT	350095-00
5	2	1/2" x 1 3/4" CARRIAGE BOLT	350363-00
6	16	1/2" FLAT WASHER	350308-00
7	14	1/2" LOCK WASHER	350309-00
8	14	1/2" HEX NUT	350258-00
9	4	PUSH NUT BOLT RETAINER	350200-00
10	2	DRAW PIN	357035-00
11	2	SPRING PIN	357036-00
12	2	CONNECTORS	200008-00
13	2	10" CABLES	650646-10
14	2	1/2" x 4" CARRIAGE BOLT	350124-00
15	2	1/2" x 5" BOLT	350107-00
16	2	1/2" CLIPPED WASHER	A-002687
17	2	3/8"x 1 1/2" x 2" BACKING PLATE	A-000713
18	2	1/4" x 1 1/4" x 2 1/2" BACKING PLATE	A-000228
19	1	DRIVER SIDE ARM	C-000106
20	1	PASSENGER SIDE ARM	C-000107
21	1	DRIVER SIDE RECEIVER	C-000108
22	1	PASSENGER SIDE RECEIVER	C-000109
23	1	DRIVER INSIDE BRACE	C-002619
24	1	PASSENGER INSIDE BRACE	C-002620
25	1	DRIVE OUTSIDE BRACE	C-002621
26	1	PASSENGER OUTSIDE BRACE	C-002622
27	4	SHIM	A-004510

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