



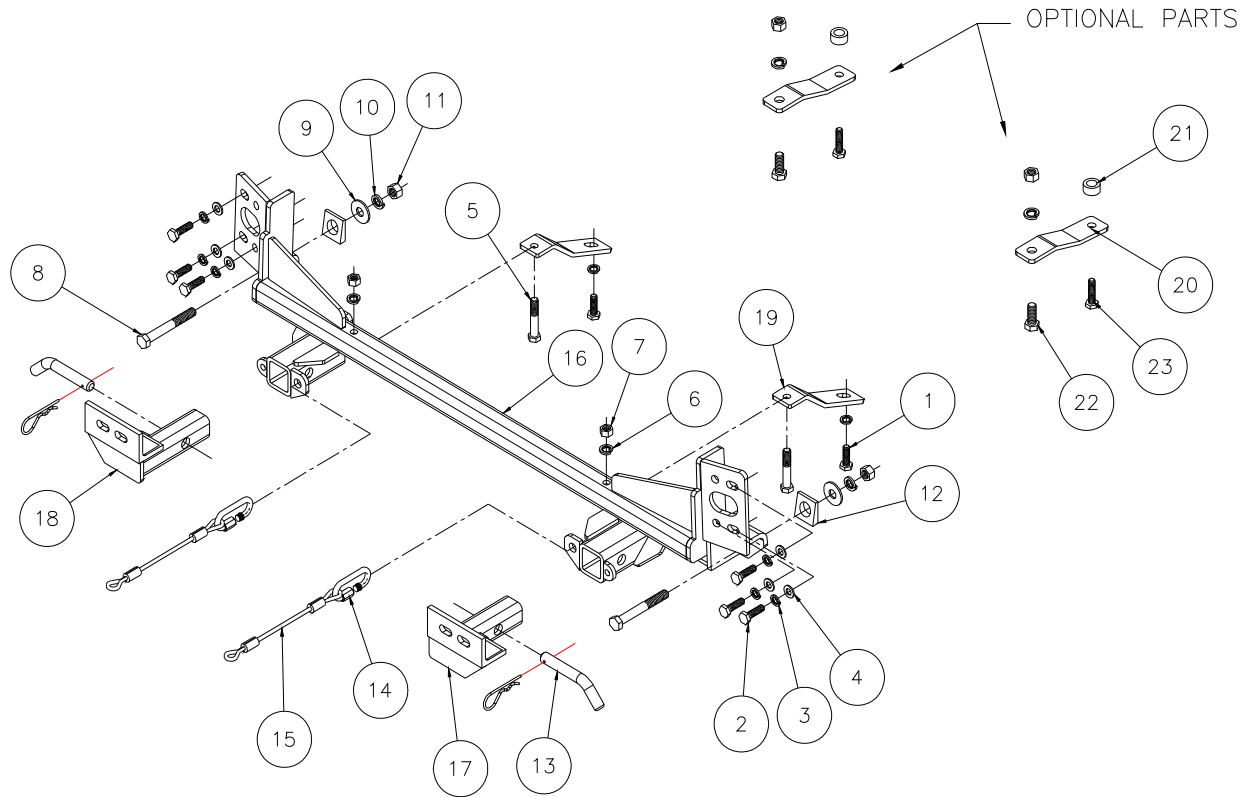
BASEPLATE KIT INSTALLATION INSTRUCTIONS

KIT# 1180-1

04/08/11
KS

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ROADMASTER, INC.



ITEM	QTY	NAME	MATERIAL
1	2	10mm x 1.25 x 30mm BOLT	356201-00
2	6	10mm x 1.25 x 35mm BOLT	356202-00
3	8	10mm LOCK WASHER	355715-00
4	6	10mm FLAT WASHER	355710-00
5	2	7/16" x 2 1/2" BOLT	350078-00
6	2	7/16" LOCK WASHER	350307-00
7	2	7/16" NUT	350256-00
8	2	1/2" x 4" BOLT	350105-00
9	2	1/2" FLAT WASHER	350308-20
10	4	1/2" LOCK WASHER	350309-00
11	4	1/2" HEX NUT	350258-00
12	2	3/4" BEVELED WASHER	350349-00
13	2	DRAW PIN W/ CLIP	357035-00
14	2	QUICK LINK	200008-00
15	2	8" SAFETY CABLES	500646-08
16	1	MAIN RECEIVER BRACE WELDMENT	C-001340
17	1	DRIVER SIDE ARM WELDMENT	C-001341
18	1	PASSENGER SIDE ARM WELDMENT	C-001342
19	2	MOUNTING PLATE	B-000858
20	2	OPTIONAL MOUNTING PLATE	B-001105
21	2	1" O.D. x 0.188 WALL x 1/2" PIPE SPACER	A-000061
22	2	1/2" x 1 1/4" BOLT	350094-00
23	2	10mm x 1.25 x 40mm BOLT	356203-00



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This kit is one of our XL series, which allows the visible front portion of the bracket to be easily removed from the front of the vehicle (Fig.A and Fig.B). The bracket kit consists of a main receiver brace, two lower braces, two removable front braces and a hardware pack. The main receiver brace mounts to the frame rail ends and the core support. The two lower braces mount to the core support. The removable front braces install in the main receiver brace.

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.



IMPORTANT: All baseplates **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 and lock washers on all fasteners.

WARNING

Failure to heed these warnings or follow the installation instructions may result in a voided warranty, loss of towed vehicle, personal injury or death.

- Do not weld or modify this baseplate or its components. Welding or modification will void the warranty.
- Do not use this document as a basis to design/fabricate a baseplate, as it may not show all parts or structural components.
- We strongly recommend professional installation.
- If the towed vehicle has been in an accident, it must be properly repaired before attaching the baseplate. Do not install the baseplate if any structural frame damage is found.
- The installer must use all bolts and parts supplied. If running changes were made by the vehicle manufacturer after this kit was designed, some bolts or other fasteners may no longer be the correct size. It is the installer's responsibility to verify this kit is securely fastened to the vehicle.
- Use Loctite® Red on all bolts used to secure this baseplate. Torque all bolts to the specifications found at the end of these instructions. Do not over-torque the bolts or failure may occur.
- The installer must inspect the baseplate to ensure adequate clearance, particularly around hoses, air conditioner lines, radiators, etc. or non-warranty failure may result.
- Roadmaster manufactures many styles of baseplates. If your baseplate 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.
- Some motorhome chassis have such a tight turning radius that you can damage your motorhome, towed vehicle, tow bar or baseplate 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 your 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 or vehicles.
- 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. See cable instructions for proper routing. Failure to do so will result in non-warranty damage and/or the loss of the towed vehicle.
- This kit is designed for use with ROADMASTER tow bars and ROADMASTER adapters only. Using this kit with other brands, without an approved ROADMASTER adapter, may result in non-warranty damage or injury.
- Receiver extensions and out-of-level towing situations of 3 inches or more. This can cause the system to swing much higher and lower, causing excessive strain on the tow bar, baseplate and frame. That can cause the towing system to fail, causing property damage, personal injury or even death. If you must use a receiver extension or drop hitch to tow, it will reduce your receiver's weight capacity by 1/3 to avoid damaging your system. Never use more than one extension and/or drop hitch, as this will void your warranty.
- Every 3,000 miles, the owner must inspect all mounting points for cracks or fatigue, and check the fasteners for proper torque, according to the bolt torque requirements chart on the last page of these instructions.
- The owner must follow the vehicle manufacturer's instructions to prepare the vehicle for towing. Failure to do so may cause severe damage to the vehicle.
- This baseplate is only warranted for the original installation. Installing a used baseplate on another vehicle is not recommended and will void the warranty.



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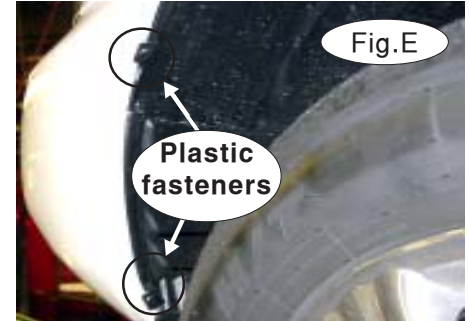
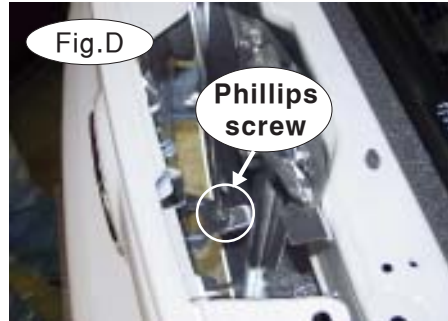
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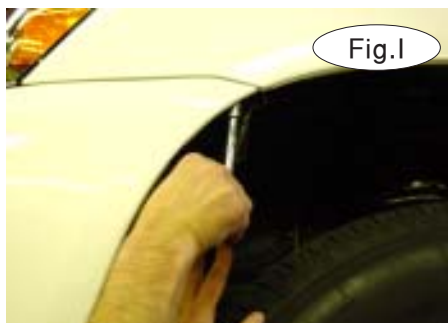
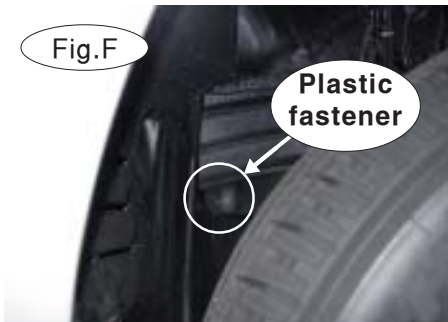
'01-'07 Toyota Highlander Instructions

This bracket kit fits the 2001-10 Toyota Highlander. For the '01-'07 Toyota Highlander, follow the instructions below. For '08-'10 Toyota Highlander instructions, see the separate section included in these instructions.

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.



1. Start by removing four plastic fasteners that attach the grille to the core support (Fig.C).
2. Once all the fasteners are removed, squeeze and push out a square plastic clip fastener for the grille, located between the headlight housing and the radiator support frame on each side.
3. Pull back the grille and remove the Phillips screw that attaches the fascia to the hood latch support (Fig.D).
4. On each side, remove three plastic fasteners: two of the plastic fasteners are attaching the fender liner to the fascia (Fig.E); the other plastic fastener is attaching the fender liner to the frame rail (Fig.F).



5. Remove ten 10mm (head) bolts (Fig.G) and two plastic fasteners (Fig.H) attaching the lower splash shield to the fascia and the sub frame.
6. On both sides, pull back the fender liner and remove one 10mm screw attaching the corner of the fascia to the fender (Fig.I).



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7. If your vehicle is equipped with fog lights unplug them before removing the fascia. Then, remove the fascia by pulling out and forward on both corners (Fig.J).

8. Remove the ambient temperature sensor (Fig.K).

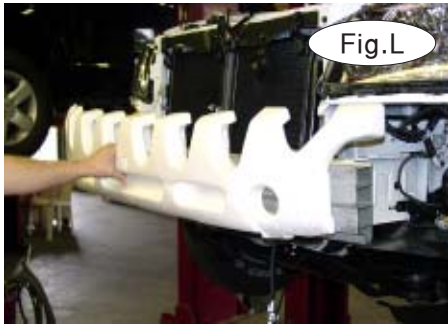


Fig.L

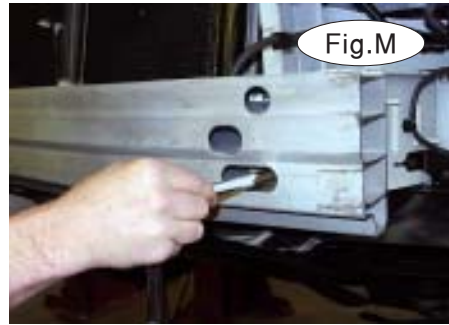


Fig.M

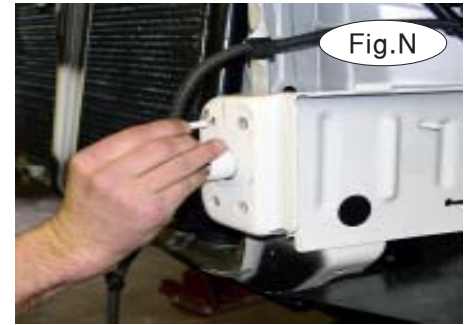


Fig.N

9. Remove the foam shock absorption core by pulling forward (Fig. L). Note: this will not be reinstalled. Retain the foam shock absorption core and attachment hardware so that it can be replaced if the bracket is ever removed.

10. Remove six 14mm (head) bolts to remove the bumper core (Fig.M). Note: this will not be reinstalled. Retain the bumper core and attachment hardware so that it can be replaced if the bracket is ever removed.

11. Remove the alignment studs at the end of each frame rail (Fig.N).



Fig.O

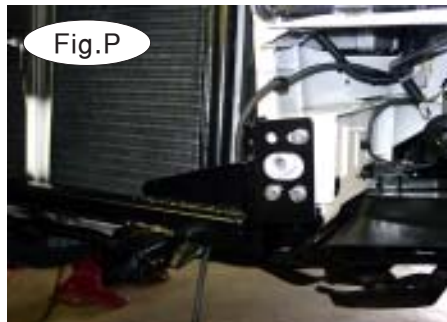


Fig.P

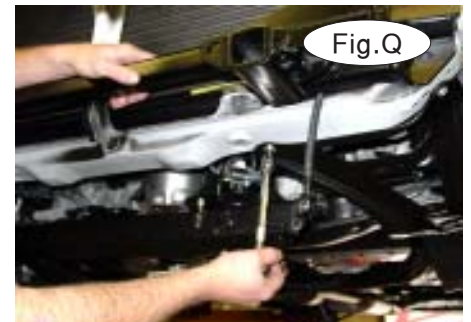


Fig.Q

12. Now, place the main receiver brace into the ends of the frame rails (Fig.O).

13. Bolt the main receiver brace into place using the three supplied 10mm x 1.25 x 35mm bolts, flat washers and lock washers (Fig.P). Repeat for the other side. Tighten to the torque specifications listed at the end of these instructions.

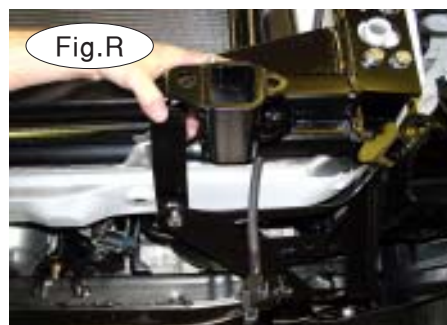


Fig.R

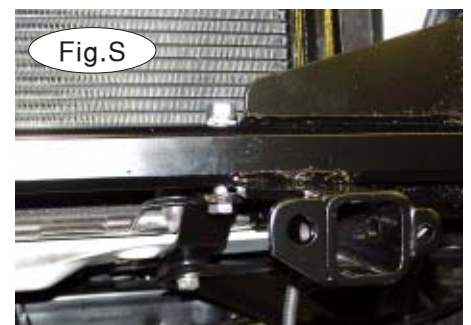


Fig.S

14. Remove the 14mm (head) bolt attaching the core support brace to the core support (Fig.Q).

15. Place one of the lower braces between the core support and the core support brace. Bolt into place using the supplied 10mm x 1.25 x 30mm bolt and lock washer (Fig.R). Repeat for the other side.

16. Now, bolt the lower brace to the main brace using the supplied 7/16" x 2 1/2" bolt and nut (Fig.S). Repeat for the other side.

17. Tighten all bolts to the torque specifications listed at the end of these instructions.



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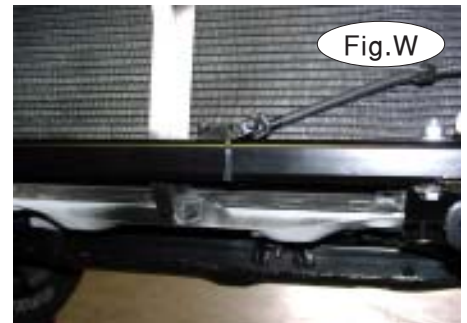
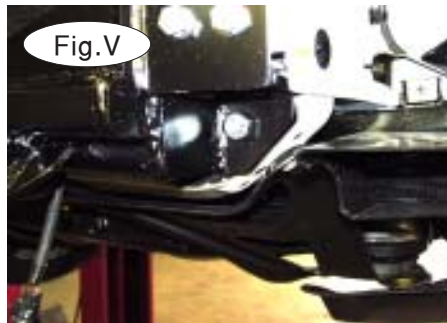
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18. On both sides, using the existing holes in the main receiver brace as a template, drill a 1/2" hole through the back of the core support (Fig.T).



19. On both sides, bolt through the main receiver brace and the core support using a 1/2" x 4" bolt, 3/4" beveled washer, flat washer, lock washer and nut (Fig.U- side view, Fig.V- front view).



20. Reattach the ambient temperature sensor to the main receiver brace using a zip tie (Fig.W).

21. Now, tighten all remaining bolts to the torque specifications listed at the end of these instructions.

22. To allow for clearance of the front receiver braces, trim the fascia on both sides using the marker lines in Figure Y as a guide. Refer to Figure X for trimming areas.

23. Reattach the fascia by reversing steps 1 through 7.

24. Fit the front bracket arms into the front receiver braces, and secure them in place with the supplied 5/8" draw pins and spring pins (Fig.Z).

25. Attach the 8" safety cables with the cable connectors (Q-Links) to the front of the receiver braces



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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'08-'10 Toyota Highlander Instructions

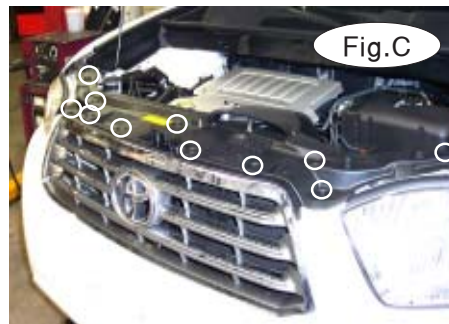
This bracket kit fits the 2001-10 Toyota Highlander. For the '08-'10 Toyota Highlander, follow the instructions below. For '01-'07 Toyota Highlander instructions, see the separate section included in these instructions.

This kit is one of our XL series, which allows the visible front portion of the bracket to be easily removed from the front of the vehicle (Fig.A and Fig.B). The bracket kit consists of a main receiver brace, two lower braces, two removable front braces and a hardware pack. The main receiver brace mounts to the frame rail ends and the core support. The two lower braces mount to the core support. The removable front braces install in the main receiver brace.

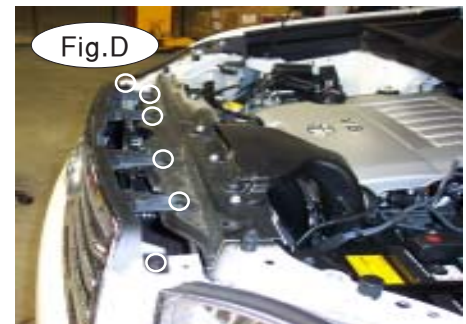
Before starting the installation, lay out the kit components in order, as they will be used. This will give you a visual idea of how the components work, and will also confirm that everything is present and accounted for.



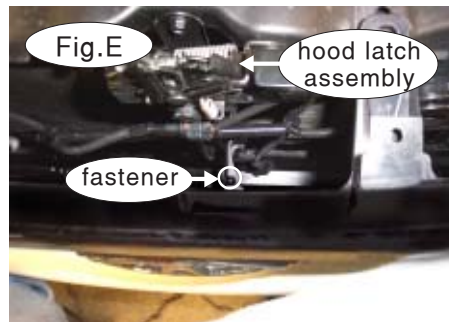
1. Remove 11 plastic fasteners attaching the radiator cover to the core support and fascia (Fig.C).



2. Remove four plastic fasteners and two 10mm (head) bolts attaching the grille to the core support (Fig.D).



3. Remove one plastic fastener located behind the grille attaching the fascia to the hood latch support (Fig.E).



4. Remove one 8mm screw and one plastic fastener from each fender well (Fig.F).



5. Remove thirteen 10mm (head) bolts and two plastic fasteners attaching the center splash shield and fender liners to the subframe and fascia. *Note:* seven bolts are located across the bottom of the fascia; two are located in the middle of the center splash shield; four are located across the back of the center splash shield and the two plastic fasteners are located toward the outside edge of the center splash shield. *Note:* only the driver's side is shown in Figure G.



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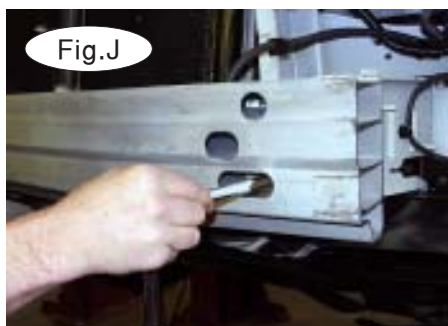
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6. Remove 14 10mm (head) bolts and two plastic fasteners attaching the center splash shield to the bottom of the fascia and the fender liners and pull back on the fender liners (Fig.G – driver's side). Unplug the fog lights, if the vehicle is so equipped.

7. Pull out to remove the fascia (Fig.H).

8. Remove the foam shock absorption core by pulling forward (Fig.I). *Note:* this part will not be reinstalled. Retain the foam shock absorption core and attachment hardware for reinstallation in case the bracket is ever removed.



9. Remove six 14mm (head) bolts attaching the bumper core to the core support (Fig.J).

10. Remove the alignment studs at the end of each frame rail (Fig.K).

11. Remove two plastic air deflectors on either side of the radiator by removing two plastic clips. These will be trimmed and reinstalled in a later step.

12. Now, place the main receiver brace into the ends of the frame rails (Fig.L).



13. Bolt the main receiver brace into place using the three supplied 10mm x 1.25 x 35mm bolts, flat washers and lock washers (Fig.M). Repeat for the other side. Tighten to the torque specifications listed at the end of these instructions.

14. Remove the 14mm (head) bolt attaching the core support brace to the radiator core support (Fig.N).

15. On both sides, using the supplied 10mm x 1.25 x 40mm bolt, lock washer and nut, attach the lower brace to the core support (Fig.O). *Note:* place a 1" x 1/2" spacer between the rear brace and lower support bracket.

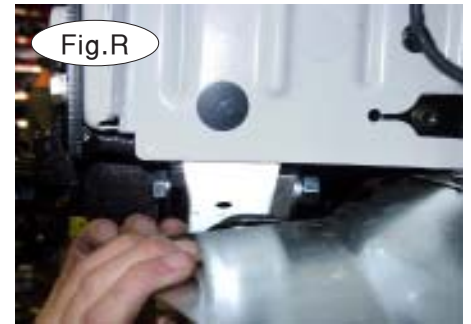
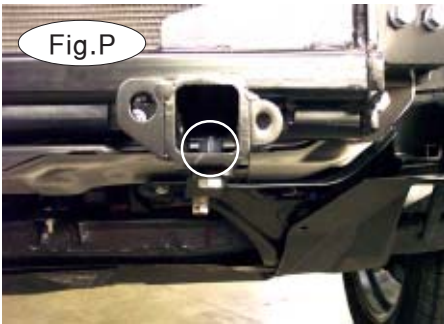


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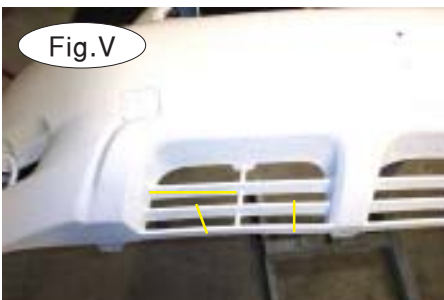
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16. On both sides, using the supplied $\frac{1}{2}$ " x $1\frac{1}{4}$ " bolt, lock washer and nut, bolt through the lower brace and the rear of the receiver. Place the nut and lock washer on the inside of the receiver (Fig.P),
17. Tighten all bolts to the torque specifications found at the end of these instructions.
18. On both sides, using the existing holes in the main receiver brace as a template, drill a $\frac{1}{2}$ " hole through the back of the core support (Fig.Q).
19. On both sides, bolt through the main receiver brace and the core support using a $\frac{1}{2}$ " x 4" bolt, $\frac{3}{4}$ " beveled spacer, flat washer, lock washer and nut (Fig.R- side view, Fig.S- front view).



20. Now, tighten all remaining bolts to the torque specifications listed at the end of these instructions.
21. The air deflectors will need to be trimmed before they are reinstalled. Using the yellow guide lines in Figure T as a reference, trim the air deflectors for both sides of the vehicle. Reinstall the air deflectors (Fig.U).



22. The fascia will need to be trimmed before it is reinstalled. Using the yellow lines in Fig.V as a guide, trim the fascia. Test fit, and trim an additional amount if needed (Fig.W). *Note:* the back of the fascia will also need to be trimmed to allow clearance for the main receiver brace (Fig.X). A die-grinder may be necessary to complete the trimming.



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- 23. Reattach the fascia by reversing steps 1 through 7.
- 24. Fit the front bracket arms into the front receiver braces, and secure them in place with the supplied 5/8" draw pins and spring pins (Fig.Y).
- 25. Attach the 8" safety cables with the cable connectors (Q-Links) to the front of the receiver braces.



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.

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Thread Size	Grade	Torque
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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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