

INSTALLATION OF R-290 FRONT MOUNTING KIT 2005-2007 FORD F-250/350 4x4

INSTALLATION SAFETY PRECAUTIONS

If any installation problems are encountered, please call G&B Specialties, Inc. for technical assistance before continuing with the installation process.



- Failure to heed to any of the following warnings could result in severe bodily injury and/or equipment damage.
- Read and understand this manual completely before attempting installation of the equipment.
- Installation instructions provided below only address the RAFNA railgear equipment. Applicable railway company procedures and policies must be adhered to.
- Before performing any work under the vehicle or railgear, ensure the engine is turned off and the parking brake is set.
- Do not start the vehicle with the power steering hoses disconnected. Reconnect all hoses and secure the power steering cooler if the vehicle is started.
- Ensure all removed components are given to the vehicle owner after the installation of the railgear. These components must be re-installed if the railgear is removed from the vehicle.
- Always disconnect the vehicle's battery when welding on the vehicle or railgear to protect the vehicle's electrical system.
- Railway Company rules governing rail travel must be observed at all times.
- Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating Front or Rear (GAWR), or the wheel or tire load ratings are exceeded.

INSTALLATION OF FRONT MOUNTING KIT

The following procedure details the installation of the front mounting kit. The hardware required for this installation is listed in the table below.

Front Mounting Kit Installation Parts

Part Number	Description	Qty
R-2989R	Front Mounting Plate - Right Side	1
R-2989L	Front Mounting Plate - Left Side	1
R-2956	Frame Washer	2
R-2957	Front Bumper Extension	2
R-2960	Railgear Mounting Shim	4
R-051	Side Wand Set	1
R-2848A	Power Steering Cooler Bracket	2
R-990KIT-015	1/4" UNC Gr. 8 Bolt x 1" Long	2
	1/4" SAE Washer	4
	1/4" UNC Gr. 3 Nylon Insert Lock Nut	2
	1/2" UNC Gr. 8 Bolt x 2" Long	14
	1/2" Gr. 8 Washer	28
	1/2" UNC Gr. 8 Nylon Insert Lock Nut	14
	5/8" UNC Gr. 8 Bolt x 2.5" Long	4
	5/8" Gr. 8 Washer	8
	5/8" UNC Gr. 8 Nylon Insert Lock Nut	4
	3/4" UNC Gr. 8 Bolt x 2.5" Long	4
	3/4" UNC Gr. 8 Bolt x 3.5" Long	4
	3/4" UNC Gr. 8 Bolt x 4.5" Long	4
	3/4" UNC Gr. 8 Bolt x 5.5" Long	4
	3/4" Gr. 8 Washer	8
	3/4" UNC Gr. 8 Nylon Insert Lock Nut	4
	1" UNC Gr. 8 Bolt x 3" Long	2
	1" Gr. 8 Washer	4
	1" UNC Gr. 8 Nylon Insert Lock Nut	2

1. Remove the front bumper and front tow hooks if so equipped. Retain the front bumper and related hardware for re-installation. The tow hooks will not be re-installed.
2. Remove the lower valence from the front bumper where equipped. The valence will not be re-installed.
3. Remove the "Blocker-Beam" and "Blocker-Beam" brackets from under the front frame.
4. Unbolt the power steering cooler from the frame leaving the hoses attached. The power steering cooler will be relocated following the installation of the railgear.
5. The front frame horns are welded to the vehicle frame on either side of the frame. Grind these welds off so that the frame horns can be removed completely.

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6. Assemble two 1" x 3" long bolts each with a 1" washer and a frame washer as shown. Place the 1" bolts through the large hole in the bottom of each frame rail
7. Place the front mounting plates tight against the outside and underside of the frame as shown so that the 1" bolts pass through the holes in the rearward portion of the front mounting plates. Clamp the front mounting plates in place.
8. Fasten the rearward portion of each front mounting plate to the frame using the previously installed 1" bolt, one 1" washer and one 1" nut.
9. Ensure that the frame washers fully cover the holes in the frame, and that the front mounting plates are tight against the outside of the frame.
10. Fasten the side of each front mounting plate to the outside of the frame with two 5/8" x 2.5" long bolts, four 5/8" washers, and two 5/8" nuts through the two holes in the side of the front mounting plates.
11. Fasten each front mounting plate to the underside of the frame with three 1/2" x 2" long bolts, six 1/2" washers, and three 1/2" nuts through the holes in the bottom of the frame. It may be necessary to enlarge the holes in the frame to 17/32" to fit the 1/2" bolts.
12. Remove the clamps from the front mounting plates. Torque the 1/2" fasteners to 100 ft-lbs dry, the 5/8" fasteners to 150 ft-lbs dry and the 1" fasteners to 250 ft-lbs dry. Do not over torque.
13. Place the front bumper extensions on the front mounting plates as shown. Fasten each front bumper extension to each front mounting plate with four 1/2" x 2" long bolts, eight 1/2" washers, and four 1/2" nuts.
14. Ensure that the front bumper extensions are aligned with each other. Torque the 1/2" fasteners to 100 ft-lbs dry. Do not over torque
15. The supplied mounting shims are to be used as required when mounting the railgear to the front mounting plates.

Following the installation of the front railgear, the power steering cooler will not fit in its original position. G&B Specialties supplies brackets to reposition the power steering cooler as described in the following steps.

16. Disconnect the two hoses from the power steering cooler and plug them.
17. Loosely bolt the supplied power steering cooler brackets to the power steering cooler with two 1/4" x 1" long bolts, four 1/4" washers, and two 1/4" nuts.
18. Position the power steering cooler in its original orientation just above the railgear such that the power steering cooler brackets straddle the railgear hydraulic cylinder mounts just below the hydraulic cylinder mount gussets.

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19. Make sure the power steering cooler does not come in contact with any component of the hydraulic system or the railgear in both the road and rail positions. It may be necessary to move the railgear hydraulic hoses or lock valves out of the way.
20. Ensure the vehicle's battery is disconnected and then weld the power steering cooler brackets to the hydraulic cylinder mounts.
21. Unplug and reconnect the power steering cooler hoses. New hoses may be required. These hoses are not included in the Rafna kit.
22. Torque the 1/4" fasteners to 12 ft-lbs dry. Do not over torque.

Following the installation of the front railgear and the power steering cooler, the front bumper will not fit in its original position. G&B Specialties supplies front bumper extensions to move the front bumper further out, in order for it to fit over the railgear with minimal trimming required as described in the following steps. (If it is not desirable to trim the front bumper, G&B Specialties can supply optional, longer bumper extensions - order two of part number R-2957A)

23. Re-install the vehicle front bumper on the front bumper extensions with the original fasteners.
24. Align the front bumper and torque the original fasteners to OEM specifications.
25. The installer must either fabricate new front bumper side braces or fabricate extensions for the vehicle front bumper side braces. Ensure that the front bumper is solidly supported.
26. Fasten the side wands to the front bumper with the supplied fasteners. Bend the side wand mounting tabs and drill the bumper as required.

NOTES:

- RIGHT SIDE SHOWN, LEFT SIDE IS A MIRROR IMAGE.
- TWO 5/8" NUTS AND WASHERS INSERTED INSIDE FRAME NOT SHOWN FOR CLARITY.
- USE ITEM 4 AS REQUIRED.

BILL OF MATERIALS/PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	R-29889R	FRONT MOUNTING PLATE - RIGHT SIDE
2	R-2989L	FRONT MOUNTING PLATE - LEFT SIDE (NOT SHOWN)
3	R-2957	FRONT BUMPER EXTENSION
4	R-2960	RAIL GEAR MOUNTING SHIM
5	R-2956	FRAME WASHER
6	R-051	SIDE WAND SET W/ FASTENERS (NOT SHOWN)
7	R-2948A	POWER STEERING COOLER BRACKET (NOT SHOWN)
8		1/4" UNC GR.8 BOLT X 1" LONG (NOT SHOWN)
9		1/4" GR.8 WASHER
10		1/4" UNC GR.8 NYLOCK NUT
11		1/2" UNC GR.8 BOLT X 2" LONG
12		1/2" GR.8 WASHER
13		1/2" UNC GR.8 NYLOCK NUT
14		5/8" UNC GR.8 BOLT X 2.5" LONG
15		5/8" GR.8 WASHER
16		5/8" UNC GR.8 NYLOCK NUT
17		1" UNC GR.8 BOLT X 3" LONG
18		1" GR.8 WASHER
19		1" UNC GR.8 NYLOCK NUT
20		VEHICLE FRAME

REV **DESCRIPTION OF CHANGES** **DATE** **BY** **APPRVD** **ECN #** **DRWN** **MR**

A CHANGED SIDE FASTENERS TO 5/8" 3/9/05 LE
 B UPDATED TITLE BLOCK AND BORDER 5/23/19 AB

G & B SPECIALTIES INC.
MANUFACTURER OF QUALITY RAILROAD PRODUCTS
BERWICK, PENNSYLVANIA (570) 752-5901, FAX (570) 752-6397

DESIGN - ENGINEERING - MANUFACTURING

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
DIMENSIONS ARE TO BE CONSIDERED IN RESPECT TO THE DOCUMENT.
DIMENSIONS ON THIS DRAWING TO BE CONSIDERED TO HAVE PRECEDENCE OVER ANY OTHER DOCUMENTS.
DATE DRAWN: 10/8/04
DRAWING NUMBER: K-M29RXFF004
PART NUMBER: K-M29RXFF004
REVISION: B

**OPERATION, SERVICE AND PARTS
OF R-290 FRONT MOUNTING KIT
2005-2007 FORD F-250/350 4x4**

OPERATION SAFETY PRECAUTIONS

If any operating, service or parts problems are encountered, please call G&B Specialties, Inc. for technical assistance.



- Failure to heed to any of the following warnings could result in severe bodily injury and/or equipment damage.
- Read and understand this manual completely before attempting operation of the railgear equipped vehicle.
- Operating instructions provided below only address the RAFNA railgear equipment. Applicable railway company procedures and policies must be adhered to.
- Railway company rules governing rail travel must be observed at all times.
- Before performing any work under the vehicle or railgear, ensure the engine is turned off and the parking brake is set.
- Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating Front or Rear (GAWR), or the wheel or tire load ratings are exceeded.

OPERATION AND SERVICE OF FRONT MOUNTING KIT

With the front mounting kit installed on this vehicle, it may be operated as normal, however the front bumper is located further forward than standard. Side wands are located on the front bumper to aid in determining the length and width of the vehicle. Caution must be used when operating the vehicle.

Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating Front or Rear (GAWR), or the wheel or tire load ratings are exceeded.

The front mounting kit must be serviced regularly to avoid damage to the equipment. Table 1 below provides the Recommended Service Schedule and Table 2 provides Standard Fastener Torque Values.

Table 1: Recommended Service Schedule

Service Required	Initial 100 km (62 Miles) of road and/or rail use	Daily	Weekly	Monthly
Inspect front mounting kit fasteners (re-torque if required)		✓	✓	✓

Table 2: Standard Fastener Torque Values

Fastener Size	Fastener Torque Value (ft-lbs) Dry
1" UNC Gr. 8 Fasteners	250
¾" UNC Gr. 8 Fasteners	175
5/8" UNC Gr. 8 Fasteners	150
½" UNC Gr. 8 Fasteners	100
3/8" UNC Gr. 8 Fasteners	40
¼" UNC Gr. 8 Fasteners	12

PARTS OF FRONT MOUNTING KIT

NOTES:

1. RIGHT SIDE SHOWN. LEFT SIDE IS A MIRROR IMAGE.
2. TWO 5/8" NUTS AND WASHERS INSERTED INSIDE FRAME NOT SHOWN FOR CLARITY.
3. USE ITEM 4 AS REQUIRED.

BILL OF MATERIALS/PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-2988R	FRONT MOUNTING PLATE - RIGHT SIDE	1
2	R-2989L	FRONT MOUNTING PLATE - LEFT SIDE (NOT SHOWN)	1
3	R-2957	FRONT BUMPER EXTENSION	2
4	R-2960	RAILGEAR MOUNTING SHIM	2
5	R-2956	FRAME WASHER	2
6	R-051	SIDE WAND SET W/ FASTENERS (NOT SHOWN)	1
7	R-2948A	POWER STEERING COOLER BRACKET (NOT SHOWN)	2
8		1/4" UNC GR.8 BOLT X 1" LONG (NOT SHOWN)	2
9		1/4" GR.8 WASHER	4
10		1/2" UNC GR.8 NYLOCK NUT	14
11		1/4" UNC GR.8 BOLT X 2" LONG	2
12		1/2" GR.8 WASHER	28
13		1/2" UNC GR.8 NYLOCK NUT	14
14		5/8" UNC GR.8 BOLT X 2.5" LONG	4
15		5/8" GR.8 WASHER	8
16		5/8" UNC GR.8 NYLOCK NUT	4
17		1" UNC GR.8 BOLT X 3" LONG	2
18		1" GR.8 WASHER	4
19		1" UNC GR.8 NYLOCK NUT	2
20		VEHICLE FRAME	N/A

REV **DESCRIPTION OF CHANGES** **DATE** **BY** **APPRVD** **ECN #** **ME** **DIAM**

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 B UPDATED TITLE BLOCK AND BORDER 5/23/19 AB
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DESIGN - ENGINEERING - MANUFACTURING

G & B SPECIALTIES INC.
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FRONT MOUNTING KIT

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1 K-M29RXFF004 10/8/04 K-M29RXFF004 B