

INSTALLATION OF R-290 REAR MOUNTING KIT 2001-2010 GM 2500/3500HD 4x2/4x4

INSTALLATION SAFETY PRECAUTIONS

If any installation problems are encountered, please call G&B Specialties 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 REAR MOUNTING KIT

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

Rear Mounting Kit Installation Parts

Part Number	Description	Qty
R-2963D	Rear Mounting Plate Left Side	1
R-2963P	Rear Mounting Plate Right Side	1
R-2960	Railgear Mounting Shim - ½" Thick	4
R-2960A	Railgear Mounting Shim - 1" Thick	2
R-2631	Railgear Mounting Shim - 2" Thick	2
R-2438	Frame Washer	2
R-990KIT-010	½" UNC Gr. 8 Bolt x 1.75" Long	4
	½" UNC Gr. 8 Bolt x 2" Long	8
	½" UNC Gr. 8 Bolt x 2.25" Long	6
	½" Gr. 8 Washer	36
	½" UNC Gr. 8 Nylon Insert Lock Nut	18
	¾" UNC Gr. 8 Bolt x 2.50" Long	4
	¾" UNC Gr. 8 Bolt x 3.50" Long	4
	¾" UNC Gr. 8 Bolt x 4.50" Long	4
	¾" UNC Gr. 8 Bolt x 5.50" Long	4
	¾" UNC Gr. 8 Bolt x 7.00" Long	4
	¾" Gr. 8 Washer	8
	¾" UNC Gr. 8 Nylon Insert Lock Nut	4
For 2007-2010 New Body Style (Short bed only Vehicles)		
R-11143D	Rear Bumper Extension Left Side	1
R-11143P	Rear Bumper Extension Right Side	1
R-11145	Bumper Extension Label	1
R-990KIT-208	½" UNC Gr.8 Bolt x 2.250" Long	6
	½" Gr. 8 Washer	12
	½" UNC Gr.8 Nylon Insert Lock Nut	6

1. Remove the original spare tire from under the vehicle's cargo box if so equipped. The original spare tire will not be re-installed.
2. **On Short Box Vehicles Only:** Remove the rear bumper and rear bumper brackets from the frame. Retain all components and fasteners for re-installation.
3. Remove the tow hitch from the rear of the frame if so equipped. The tow hitch will not be re-installed.
4. Place each rear mounting plate against the underside and outside of the frame rails around the rear spring hangers as shown.

5. **On Short Box Vehicles Only:** The three slots on the bottom of each rear mounting plate should align with the slots in the underside of the frame for the tow hitch. The frame washers are used over the rearmost slot on each side to prevent the fasteners from pulling through the frame. Fasten each rear mounting plate to the underside of the frame with two ½" x 1.75" long bolts, four ½" washers, and two ½" nuts in the foremost holes and with one ½" x 2.25" long bolt, two ½" washers, and one ½" nut in the rearmost hole.
6. **On Short Box Vehicles Only:** Drill two 17/32" holes through the side of each rear mounting plate and the side of the frame just ahead of the rear spring hanger. Ensure that the vehicle manufacturer's frame drilling guidelines are met. Fasten each rear mounting plate to the side of the frame with two ½" x 2" long bolts, four ½" washers, and two ½" nuts. Then, using the rear bumper bracket mounting holes in the frame as a guide, drill two 17/32" holes in each rear mounting plate to match. Re-position the rear bumper brackets in their original position. Fasten each rear mounting plate and rear bumper bracket to the frame with two ½" x 2.25" long bolts, four ½" washers, and two ½" nuts.
7. **On Long Box Vehicles Only:** The two rearmost slots on the bottom of each rear mounting plate should align with the slots in the underside of the frame for the tow hitch. The foremost slot on each rear mounting plate will not be used. The frame washers will not be used. Fasten each rear mounting plate to the underside of the frame with two ½" x 1.75" long bolts, four ½" washers, and two ½" nuts.
8. **On Long Box Vehicles Only:** Drill two 17/32" holes through the side of each rear mounting plate and the side of the frame just ahead of the rear spring hanger and just behind the rear spring hanger. Ensure that the vehicle manufacturer's frame drilling guidelines are met. Fasten each rear mounting plate to the side of the frame with four ½" x 2" long bolts, eight ½" washers, and four ½" nuts.
9. Ensure the rear mounting plates are tight to the underside and outside of the frame and are aligned with each other. Torque all the ½" fasteners to 100 ft-lb dry. Do not over torque.
10. **On Short Box Vehicles Only:** Re-install the rear bumper in its original position onto the rear bumper brackets with the original fasteners. Torque these fasteners to the vehicle manufacturer's specifications.
11. Three thicknesses of shims (½", 1", and 2") are supplied and are to be used to mount the railgear to the rear mounting plates. The rear mounting plates have three hole sets available to mount the railgear. It is imperative that if the railgear is mounted in either the foremost or center hole sets, then a **minimum of 1" shim** is required between the railgear and the rear mounting plates. If the railgear is mounted in the rear most hole set, then a **minimum of ½" shim** is required. This is due to possible interference between the railgear and the vehicle's rear suspension components.

2007-2010 New Body Style (Short Bed Only Vehicles)

(Refer to Page 6)

The rear bumper cannot be re-installed in its original location due to interference between the rear bumper and hydraulic pump and manifold assemblies. A rear bumper extension kit is required for these applications and will be provided with the rear mounting kit.

BILL OF MATERIALS/PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-2963D	REAR MTG PLATE - DRV SIDE	1
2	R-2963P	REAR MTG PLATE - PASS SIDE	1
3	R-2960	MOUNTING SHIM - 1/2" THICK (USE AS REQUIRED)	4
4	R2960A	RAIL GEAR MTG SHIM - 1" THICK (USE AS REQUIRED)	2
5	R-2631	RAIL GEAR MTG SHIM - 2" THICK (USE AS REQUIRED)	2
6	R-2438	FRAME WASHER	2
7	R-11143D	REAR BUMPER EXTENSION - DRY SIDE	1
8	R-11143P	REAR BUMPER EXTENSION - PASS SIDE	1
9		1/2" UNC GR.8 BOLT X 1.75" LONG	4
10	R-990KIT-010	1/2" UNC GR.8 BOLT X 2" LONG	4
11		1/2" UNC GR.8 BOLT X 2.25" LONG	12
12	R-990KIT-208	1/2" GR.8 WASHER	40
13		1/2" UNC GR.8 NYLOCK NUT	20
14		OEM BUMPER BRACKET	2
15		VEHICLE FRAME	N/A

NOTE:
SHORT BOX VEHICLES ONLY
BUMPER EXTENSIONS ONLY NECESSARY
FOR 2007-2010 NEW BODY STYLE

REV	DESCRIPTION OF CHANGES	DATE	BY	APPRVD	ECN #	DESIGNED	CHECKED	APPROVED
A	UPDATED TITLE BLOCK AND BORDER	6/22/19	AB					

		G & B SPECIALTIES INC. 535 WEST 3RD STREET BERWICK, PENNSYLVANIA 1752-5901, FAX (570) 752-6397
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SHEET NO.	DRAWING NUMBER	PART NUMBER
1	K-M29XRGR001	K-M29XRGR001
DATE DRAWN	2/17/03	REVISION
1	2/17/03	A

BILL OF MATERIALS/PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-2963D	REAR MTG PLATE - DRV SIDE	1
2	R-2963P	REAR MTG PLATE - PASS SIDE	1
3	R-2960	MOUNTING SHIM - 1/2" THICK	2
4	R-2960A	RAILGEAR MTG SHIM - 1" THICK	2
5	R-2631	RAILGEAR MTG SHIM - 2" THICK	2
6		1/2" UNC GR.8 BOLT X 1.75" LONG	4
7	R-990KIT-010	1/2" UNC GR.8 BOLT X 2" LONG	8
8		1/2" UNC GR.8 WASHER	24
9		1/2" UNC GR.8 NYLOCK NUT	12
10	N/A	VEHICLE FRAME	1

NOTE: LONG BOX VEHICLES ONLY

REV	DESCRIPTION OF CHANGES	DATE	BY	APPRVD	ECN #	DESIGN	CHECKED	APPROVED
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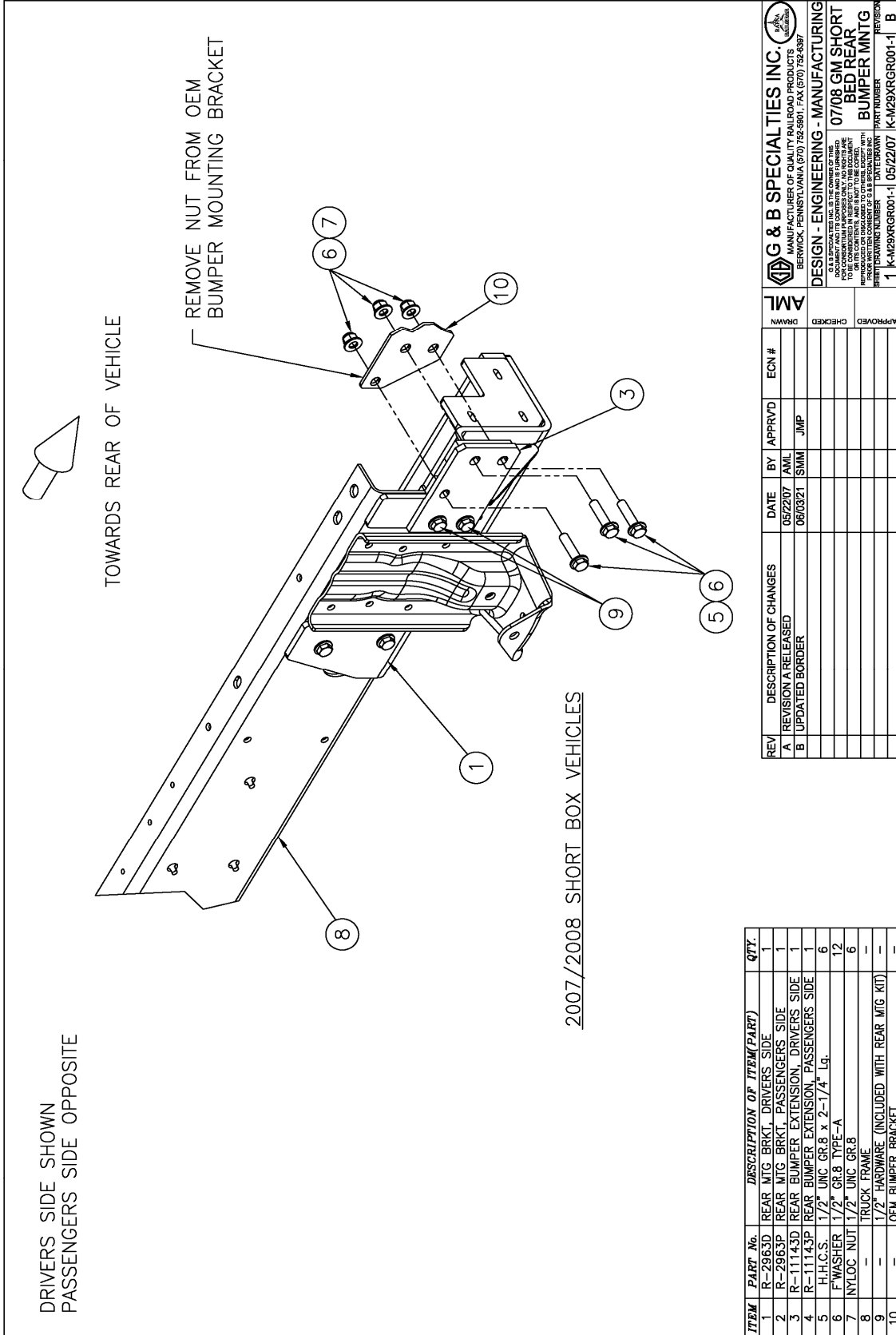
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PARTS LISTED ARE SUBJECT TO CHANGE WITHOUT NOTICE.		K-M29XRGR001	

INSTALLATION OF SHORT BOX BUMPER EXTENSION

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

Part Number	Description	Qty.
R-11143D	Rear Bumper Extension Drivers Side	1
R-11143P	Rear Bumper Extension passengers Side	1
R-11145	Bumper Sticker	1
R-990KIT-208	1/2" UNC Gr. 8 Bolt x 2.25" Long	6
	1/2" Gr. 8 Washer	12
	1/2" UNC Gr. 8 Nylon Insert Lock Nut	6

1. Remove the rear bumper. Retain the rear bumper for re-installation.
2. Remove the existing nuts located on the OEM bumper mounting brackets as shown in **Figure 1**.
3. Position the rear bumper extensions as shown in **Figure 1** and fasten extensions with ½" hardware included with the rear mounting kit.
4. Position rear bumper in between the bumper extensions, making sure all holes on the extension brackets and bumper mounting brackets line up, and fasten with six ½" x 2 - ¼" hex head cap screws, twelve ½" type-A washers, and six ½" nylock nuts as shown in **Figure 1**.
5. Torque all 1/2" fasteners to 100 ft-lbs dry.



OPERATION, SERVICE AND PARTS OF R-290 REAR MOUNTING KIT 2001-2010 GM 2500/3500HD 4x2/4x4

OPERATION SAFETY PRECAUTIONS

If any operating, services 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 REAR MOUNTING KIT

With the rear mounting kit installed on this vehicle, it may be operated as normal.

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 rear 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 rear 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
⅝" UNC Gr. 8 Fasteners	150
½" UNC Gr. 8 Fasteners	100
⅜" UNC Gr. 8 Fasteners	40
¼" UNC Gr. 8 Fasteners	12

PARTS OF REAR MOUNTING KIT

BILL OF MATERIALS/PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-2963D	REAR MTG PLATE - DRV SIDE	1
2	R-2963P	REAR MTG PLATE - PASS SIDE	1
3	R-2960	MOUNTING SHIM - 1/2" THICK (USE AS REQUIRED)	4
4	R2960A	RAIL GEAR MTG SHIM - 1" THICK (USE AS REQUIRED)	2
5	R-2631	RAIL GEAR MTG SHIM - 2" THICK (USE AS REQUIRED)	2
6	R-2438	FRAME WASHER	2
7	R-11143D	REAR BUMPER EXTENSION - DRV SIDE	1
8	R-11143P	REAR BUMPER EXTENSION - PASS SIDE	1
9		1/2" UNC GR.8 BOLT X 1.75" LONG	4
10	R-990KIT-010	1/2" UNC GR.8 BOLT X 2" LONG	4
11		1/2" UNC GR.8 BOLT X 2.25" LONG	12
12	R-990KIT-208	1/2" GR.8 WASHER	40
13		1/2" UNC GR.8 NYLOCK NUT	20
14		OEM BUMPER BRACKET	2
15		VEHICLE FRAME	N/A

NOTE:
SHORT BOX VEHICLES ONLY
BUMPER EXTENSIONS ONLY NECESSARY
FOR 2007-2010 NEW BODY STYLE

REV	DESCRIPTION OF CHANGES	DATE	BY	APPRVD	ECN #	DRWN	CHKD	APPROVED
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SHEET/DRAWING NUMBER	DATE DRAWN
1 K-M29XRGR001	2/17/03
PART NUMBER	REVISION
K-M29XRGR001	A

BILL OF MATERIALS/PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	R-2963D	REAR MTG PLATE - DRV SIDE	1
2	R-2963P	REAR MTG PLATE - PASS SIDE	1
3	R-2960	MOUNTING SHIM - 1/2" THICK	2
4	R-2960A	RAILGEAR MTG SHIM - 1" THICK	2
5	R-2631	RAILGEAR MTG SHIM - 2" THICK	2
6		1/2" UNC GR.8 BOLT X 1.75" LONG	4
7	R-990KIT-010	1/2" UNC GR.8 BOLT X 2" LONG	8
8		1/2" GR.8 WASHER	24
9		1/2" UNC GR.8 NYLOCK NUT	12
10	N/A	VEHICLE FRAME	1

NOTE: LONG BOX VEHICLES ONLY

G & B SPECIALTIES INC. 1000 W. MARKET STREET BERWICK, PENNSYLVANIA (717) 752-5901, FAX (717) 752-6397	DESIGN - ENGINEERING - MANUFACTURING
REAR MOUNTING KIT	REAR MOUNTING KIT
DATE DRAWN 2/17/03	DATE DRAWN 2/17/03
PART NUMBER K-M29XRGR001	PART NUMBER K-M29XRGR001
REVISED A	REVISED A

REV	DESCRIPTION OF CHANGES	DATE	BY	APPRVD	ECN #	DRW#	APPROVED
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