

INSTALLATION OF R-290M REAR MOUNTING KIT 2017-PRESENT FORD RANGER (MEXICO SPEC)

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.
- Beware of all pinch points on the railgear and keep all parts of the body clear.
- Always disconnect the vehicle's battery when welding on the vehicle or railgear to protect the vehicle's electrical system.
- 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.
- Railway Company rules governing rail travel must always be observed.
- Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating (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 Table 1.

Table 1: Rear Mounting Kit Installation Parts

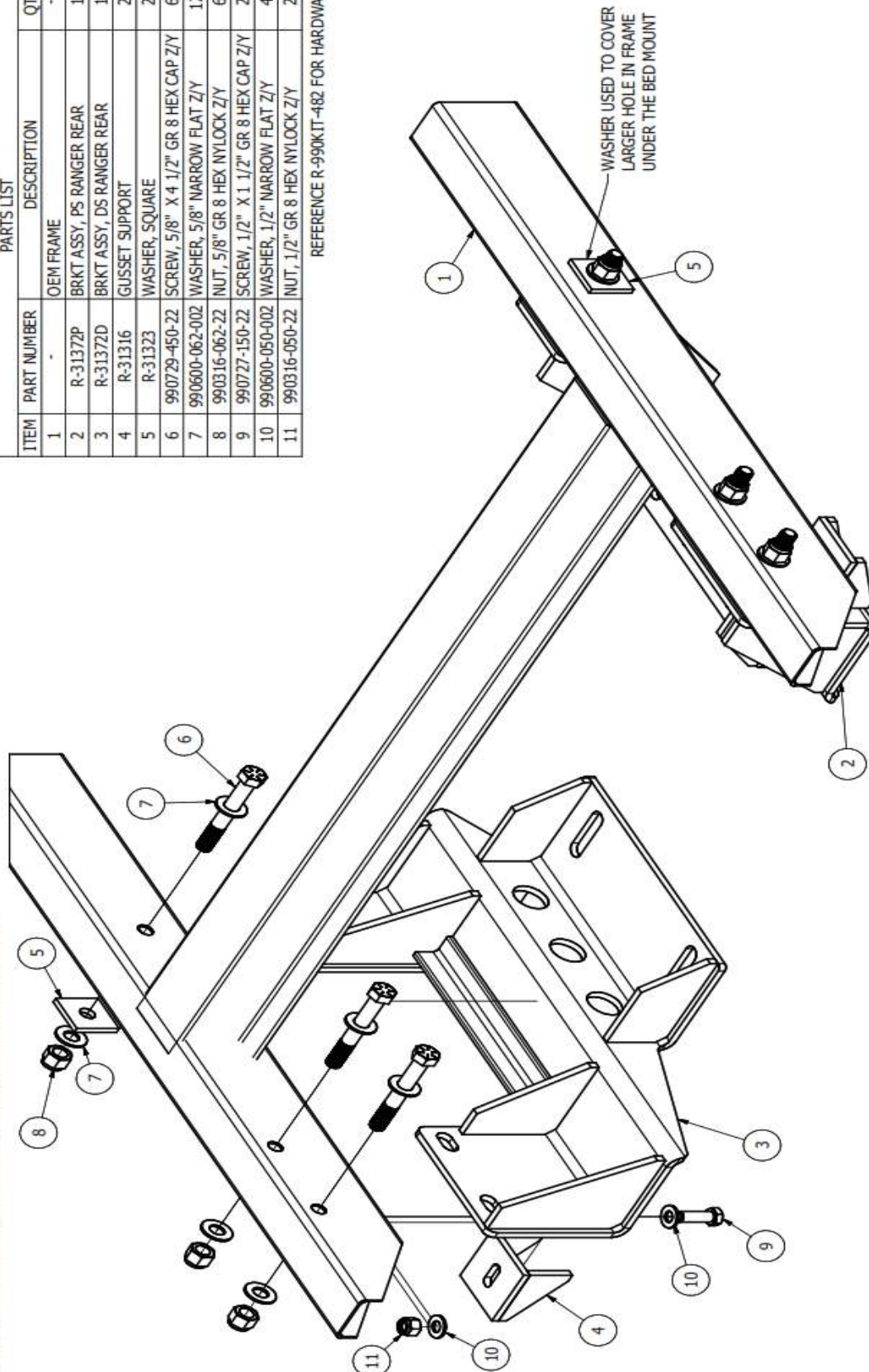
Part Number	Description	QTY
R-31372D	Rear Mounting Bracket, Drivers Side	1
R-31372P	Rear Mounting Bracket, Passengers Side	1
R-31316	Support Gusset	2
R-31323	Washer, Square	2
R-2960	Railgear Mounting Shim - 1/2" Thick	4
R-2960A	Railgear Mounting Shim - 1" Thick	2
R-2631	Railgear Mounting Shim - 2" Thick	2
R-990KIT-482	5/8" UNC Gr.8 Bolt X 4.50"	6
	5/8" Type- A Flat Washer Gr.8	12
	5/8" UNC GR.8 Nylock Nut	6
	1/2" UNC Gr.8 Bolt X 1.50"	2
	1/2" Type- A Flat Washer Gr.8	4
	1/2" UNC GR.8 Nylock Nut	2
	3/4" UNC Gr.8 Bolt X 2.75"	4
	3/4" UNC Gr.8 Bolt X 3.25"	4
	3/4" UNC Gr.8 Bolt X 4.00"	4
	3/4" UNC Gr.8 Bolt X 4.50"	4
	3/4" Type- A Flat Washer Gr.8	8
	3/4" UNC GR.8 Nylock Nut	4

1. Remove the original spare tire and spare tire heat shield from under the bed if so equipped. This will not be re-installed.
2. Remove the rear bumper.
3. Removal of bed should allow for an easier installation but is not required.
4. Remove the tow hitch from the rear of the frame if necessary.
5. Place mounting bracket against the inside of the frame rails as shown. Bracket should line up with existing holes in the frame.
6. Install 5/8" x 4 1/2" bolts in bracket to hold in place. Ensure bracket is parallel with the ground and mark hole to be drilled towards the front of the vehicle. NOTE: When done properly, bolt will pass under the bed mount and come out through the large hole on the outside of the frame. See install photo below.
7. Remove bracket and drill marked hole. At this time, it can be determined if a frame spacer would need to be fabricated to ensure the rear frame does not crush when torquing mounting hardware.

8. Re-install mounting bracket along with frame spacers if fabricated using the supplied 5/8" hardware.
9. Repeat process for remaining mounting bracket.
10. Once brackets are mounted, take the R-31316 (Support Gusset) and place it in a suitable location such that it sits flat against the mounting bracket and bottom of the frame and is free of interference.
11. If no existing holes can be utilized in the frame, mark in the center of the frame using the slot as a guide and drill a 17/32" hole or equivalent.
12. Remove paint from the mounting bracket to get a proper weld between the support gusset and mounting bracket.
13. With hole drilled, use the supplied 1/2" hardware to mount support gusset. Make sure the gusset sits tight up against the mounting bracket and bottom of frame.
14. Weld support gusset to the mounting bracket using 1/4" fillet welds on the inside and outside of both gusset supports.
15. Repeat process for other side.
16. The exhaust will need to be modified to allow the railgear to function properly. Any modifications must comply with the Manufacturer's Vehicle Regulations.
17. Re-install the tow hitch if applicable.
18. Ensure the mounting brackets are tight to the inside of the frame and are aligned with each other.
19. Remount the bumper, if additional spacers/brackets are needed to allow the gear to function properly, fabricate such that the bumper mounts in the original location.
20. The supplied railgear mounting shims are to be used as required when mounting the railgear to the rear mounting brackets.

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	-	OEM FRAME	-
2	R-31372P	BRKT ASSY, PS RANGER REAR	1
3	R-31372D	BRKT ASSY, DS RANGER REAR	1
4	R-31316	GUSSET SUPPORT	2
5	R-31323	WASHER, SQUARE	2
6	990729-450-22	SCREW, 5/8" X 4 1/2" GR 8 HEX CAP Z/Y	6
7	990600-062-002	WASHER, 5/8" NARROW FLAT Z/Y	12
8	990316-062-22	NUT, 5/8" GR 8 HEX NYLOCK Z/Y	6
9	990727-150-22	SCREW, 1/2" X 1 1/2" GR 8 HEX CAP Z/Y	2
10	990600-050-002	WASHER, 1/2" NARROW FLAT Z/Y	4
11	990316-050-22	NUT, 1/2" GR 8 HEX NYLOCK Z/Y	2

REFERENCE R-990KIT-482 FOR HARDWARE

[illegible]

ALL WELDS TO CONFORM
TO AWS D1.1

Figure 1: Bracket Installation

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Photo 1: Bed Mount and Bolt Installed



Photo 2: Square Washer Installed

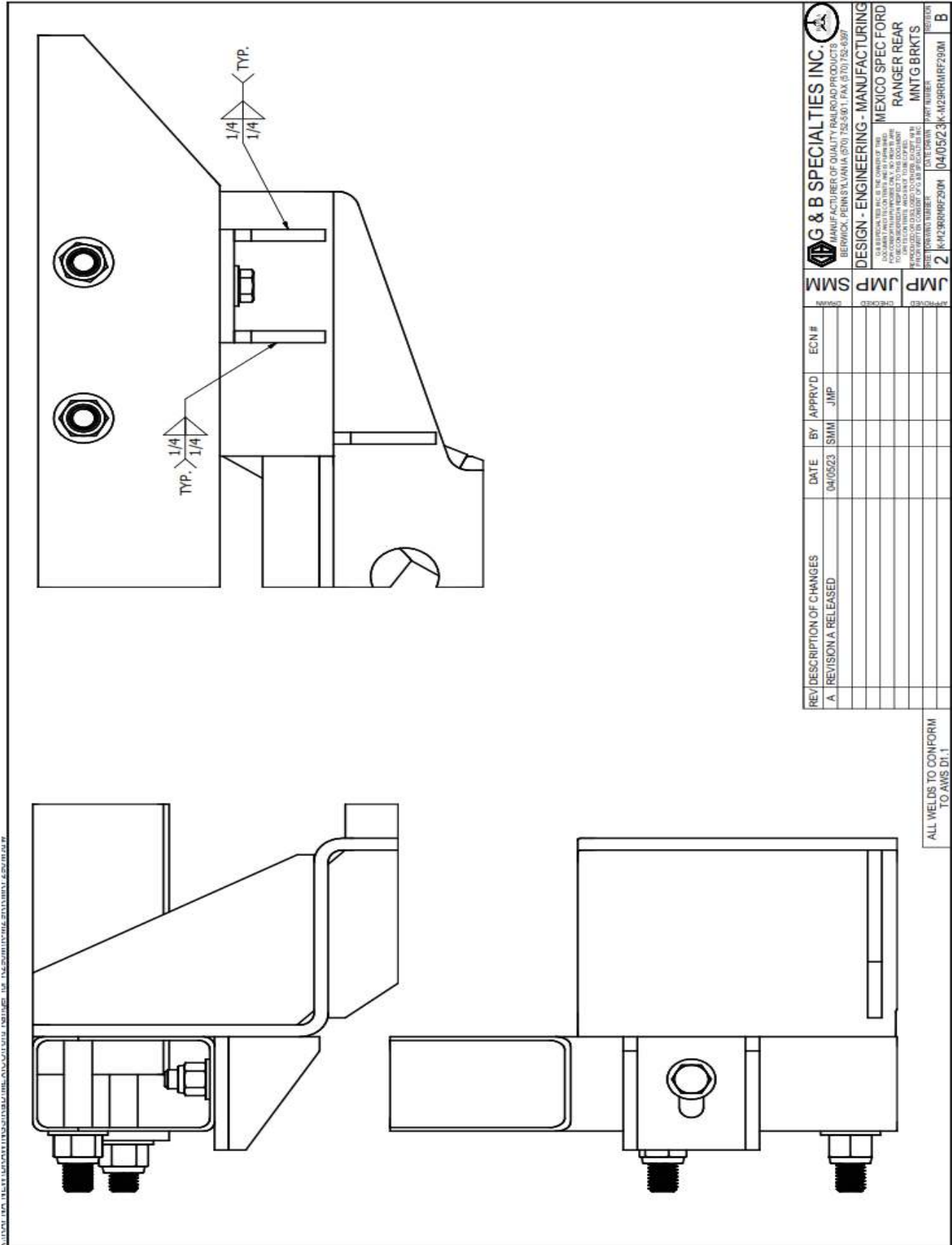


Figure 2: Gusset Installation

OPERATION AND SERVICE OF R-290M REAR MOUNTING KIT 2017-PRESENT FORD RANGER (MEXICO SPEC)

OPERATION AND SERVICE 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 Industries railgear equipment. Applicable railway company procedures and policies must be adhered to.
- Railway company rules governing rail travel must always be observed.
- 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 2 below provides the Recommended Service Schedule and Table 3 provides Standard Fastener Torque Values.

Table 2: Recommended Service Schedule

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

Table 3: Standard Fastener Torque Values

Fastener Size	Torque Value (ft-lbs) Dry
1" UNC Gr. 8 Fasteners	250
3/4" UNC Gr. 8 Fasteners	175
5/8" UNC Gr. 8 Fasteners	150
1/2" UNC Gr. 8 Fasteners	100
7/16" UNC Gr. 8 Fasteners	70
3/8" UNC Gr. 8 Fasteners	40
1/4" UNC Gr. 8 Fasteners	12

RAILGEAR SHIM RECOMMENDATIONS

When determining the amount of shim needed for proper mounting heights, the following recommendations should be followed. Any questions outside of what is covered, please contact Rafna's service manager for all other inquiries.

- Shim should not exceed a combination of 6".
- Any shim amount over 3" should have the "floating shims" tacked together as well as the upper and lower shim tacked to the mounting bracket and railgear as shown below.
- All welds should be painted when finished to prevent rusting.

