

## INSTALLATION OF R-230 FRONT 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 FRONT MOUNTING KIT**

The following procedure details the installation of the front mounting kit. The hardware required for this installation is listed in Table 1.

**Table 1: Front Mounting Kit Installation Parts**

Part Number	Description	Qty
R-31307D	Front Mounting Bracket, Drivers Side	1
R-31307P	Front Mounting Bracket, Passengers Side	1
R-31312	Mounting Plate, Frame Horn	2
R-31313	Gusset	2
R-31321	Frame Spacer	2
R-31322	Machined Frame Spacer	2
R-20042	Railgear Mounting Shim - 1/2" Thick	4
R-20041	Railgear Mounting Shim - 1/4" Thick	4
R-20040	Railgear Mounting Shim - 3/4" Thick	4
R-051	Side Wand Set	1
R-990KIT-428	5/8" UNC Gr.8 Bolt X 3.50"	4
	5/8" UNC Gr.8 Bolt X 4.00"	4
	5/8" UNC Gr.8 Bolt X 4.50"	4
	5/8" UNC Gr.8 Bolt X 5.50"	4
	5/8" Type- A Flat Washer Gr.8	16
	5/8" UNC GR.8 Nylock Nut	8
	1/2" UNC Gr.8 Bolt X 1.75"	8
	1/2" Type- A Flat Washer Gr.8	16
	1/2" UNC GR.8 Nylock Nut	8

1. Remove front bumper and any skid plate/fascia that would prevent the brackets to mount to the frame.
2. Remove the tow hooks if present. Tow hooks will not be re-installed.
3. Install the Front Horn Mounting Plate onto the front of the frame using the supplied 1/2" hardware as shown. NOTE: Hardware can be left loose as it will be taken back off before final installation.
4. Position the front mounting bracket (R-31307D for Driver's Side and R-31307P for Passenger's Side) on the inner side of the frame as shown. Install 5/8" x 4" bolt through frame and bracket so that bracket is tight against the inside of the frame and parallel with the ground. NOTE: bolt should not be over-tightened as the frame spacers are not yet installed and the frame will crush. Once position is set, mark hole on frame to be drilled using the mounting bracket as the template.
5. Remove mounting bracket and the horn mounting plate and drill a through hole at the marked location. Ensure hole is drilled straight and not on an angle as this will inhibit final installation.

6. Once drilled, install the frame spacers as shown inside the frame and bolt the front mounting bracket to the frame using the supplied 5/8" x 4" bolts and hardware. Ensure the mounting bracket lower surface is 0° to the horizontal with the vehicle in the typical road position.
7. Install the Front Horn Mounting Plate with the supplied 1/2" hardware.
8. With all brackets/plates installed on frame, weld the arm of the Horn Mounting Plate to the mounting bracket using a 3/16" fillet weld. See photo Below.
9. Place supplied gusset on outside edge of mounting bracket and against Horn Mounting Plate and weld using 3/16" fillet weld. See Figure for reference.
10. Repeat process for remaining side.
11. With both brackets installed, ensure they are parallel with the ground and aligned with each other.

**Following the installation of the front railgear, the front bumper will fit in its original position. The front bumper may need to be trimmed/modified as required.**

12. Modify the OEM bumper as required to create clearance for all railgear components to eliminate any interference during its full range of motion.
13. If mounting locations were removed during installation, reinforce the bumper as needed to ensure it remains rigid and does not vibrate during travel.
14. The supplied railgear mounting shims are to be used as required when mounting the railgear to the front mounting brackets.

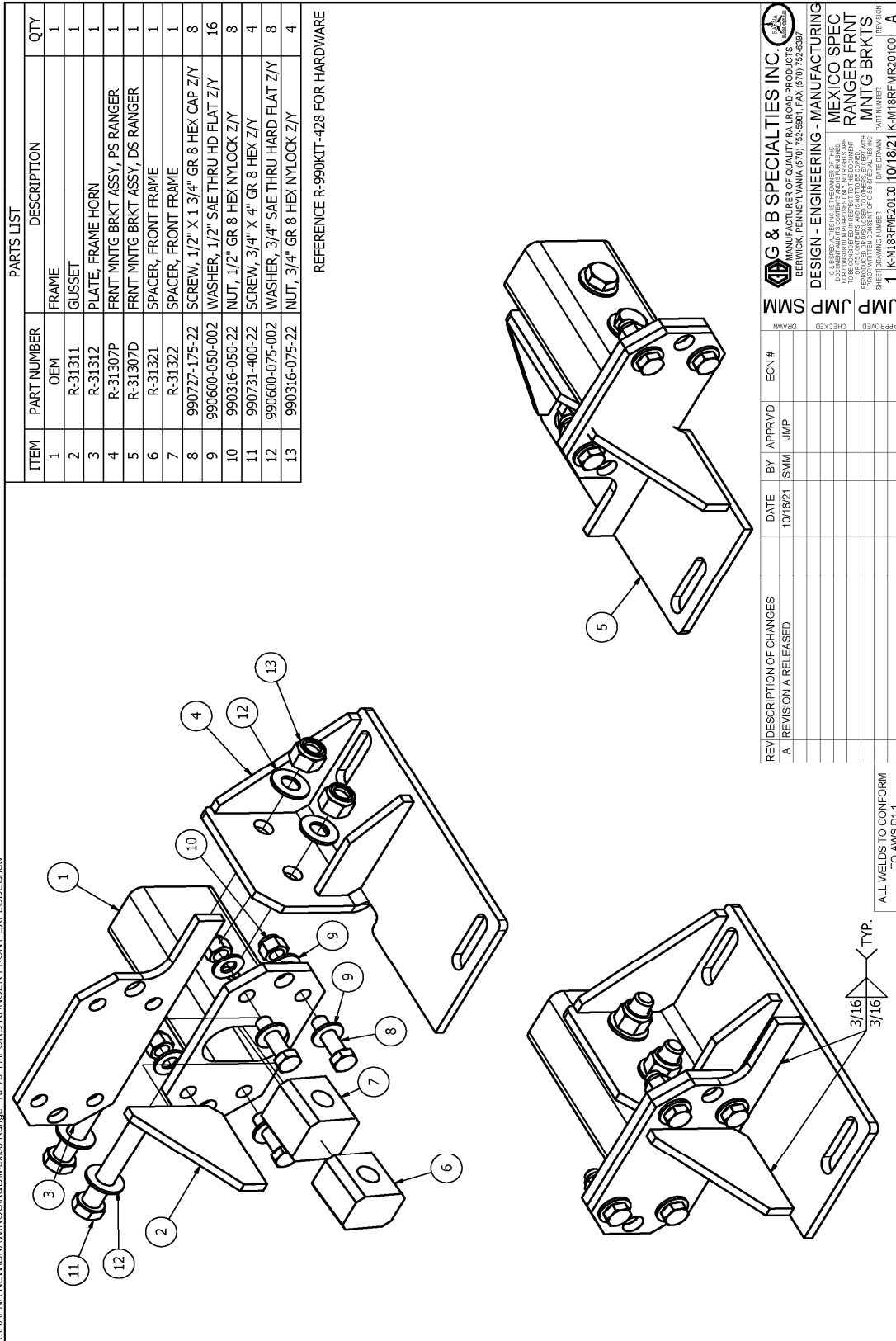


Figure 1: Bracket Installation



Photo 1: Horn Mounting Plate Welded to Mounting Bracket

## OPERATION AND SERVICE OF R-230 FRONT 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 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 Front (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.

Never operate the vehicle if the Gross Vehicle Weight Rating (GVWR), Gross Axle Weight Rating Front or Front (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 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