

INSTALLATION OF R-290 WHEEL KIT - STEEL
2008-PRESENT FORD F-250/F-350 4x4
2017-PRESENT AND UP FORD F-250/F-350 4x2

THIS MANUAL IS APPLICABLE TO THE FOLLOWING KITS: K-W25XXF012, K-W25XXF012A,
& K-W25XXF012B

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.
- The road wheels and tires must be installed before the railgear is installed in order to obtain correct height measurements.
- Do not hit the wheel adapter with any hard objects as this could dent the adapter and cause vibrations when driving. If the adapters do not easily slide onto the hubs, lightly sand the hub and the inside of the adapter.
- Always disconnect the vehicle's battery when welding on the vehicle or railgear in order to protect the vehicle's electrical system.
- Before performing any work under the vehicle or railgear, ensure the engine is turned off and the parking brake is set.
- With the installation of the vehicle road wheels and tires, it is recommended to recalibrate the vehicle's speedometer.

INSTALLATION OF WHEEL KIT

The following procedure details the installation of the wheels and tires required for the vehicle's tires to ride correctly on the rails and avoid contact with the vehicle.

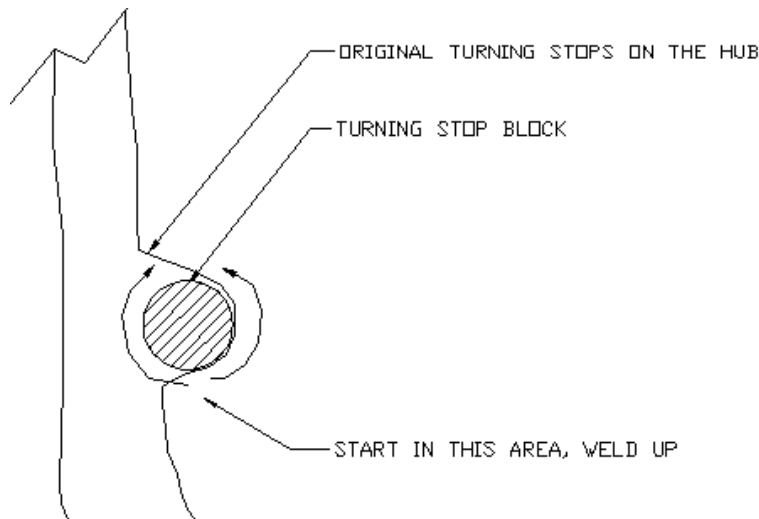
Wheel Installation Kit (for 4 or 5 wheels)

| Part Number | Description | Qty |
|-------------|---|--------|
| R-2986 | Wheel Adapter Assembly | 4 |
| S-201502 | 19.5" x 6.75" Wheel 5.60" Offset | 4 or 5 |
| S-001015I | 300 ft-lbs Wheel & 165 ft-lbs Spacer Decal | 4 or 5 |
| R-G622 | Goodyear G-622 RSD/225/70R19.5 (Not Supplied) | REF |
| S-201602 | M20 x 1.5 Two-Piece Flanged Nut | 32 |
| R-2699 | Turning Stop Block use on 2016 and older vehicles | 2 |
| R-2699C | Turning Stop Block use on 2017 vehicles | 2 |

1. Remove the original front and rear wheels.
2. Based on rail contact area and load carrying capacity, G&B Specialties Inc. suggests the use of Goodyear G-622 RSD/225/70R19.5 tires for all wheels on the railgear equipped vehicle. However, at the installer's and/or railroad's discretion, an equivalently sized and rated tire may be used. Mount and balance the tires on the supplied wheels. Install TPMS sensors if required.
3. Affix the supplied wheel and adapter torque decals to the outside face of the wheels.
4. A new location must be found for the spare wheel and the necessary brackets fabricated. It cannot be mounted under the cargo box due to interference with the rear railgear.
5. Install the wheel adapters:
 - a) Start with one wheel adapter on one hub of the vehicle.
 - b) Where fitted, remove all brake drum / disc retaining clips installed on the wheel studs. These clips will prevent the wheel adapter from seating properly.
 - c) Place the wheel adapter on the hub over the OEM wheel studs and fasten in place using the OEM wheel lug nuts.
 - d) Tighten and then torque the OEM wheel lug nuts which hold the adapter to the hub to 165 ft-lbs dry as per the torque sequence provided. Do not over torque.
6. Install the wheels:
 - a) Mount the wheels on the wheel adapters with the supplied two-piece flanged nuts.
 - b) Tighten and then torque the two-piece flanged nuts to 300 ft-lbs dry as per the torque sequence provided. Do not over torque.
7. Install the front wheel turning stop blocks:
 - a) Position the turning stop blocks over the original turning stops on the steering knuckle. To verify their position is correct, fully turn the steering wheel until the front hub contacts the knuckle. The boss on the hub should contact the turning stop block squarely on. Repeat for the other side.
 - b) Fully weld the turning stop blocks to the steering knuckles once their position is correct.

TURNING STOP BLOCK WELDING PROCEDURE

1. Grind and clean face on original turning stop on the hub.
2. Use 1/8" 11018 Low Hydrogen welding rod.
3. Heat range should be approximately 90 to 125 Amps for vertical up welding.
4. Refer to sketch, start weld at bottom and weld vertical for 180 degrees, repeat for other side to apply 360 degrees of weld.
5. After passenger's side is complete, do the driver's side in the same fashion. Welding can start on either driver's side or passenger's side.



BRAKE LINE MODIFICATION

1. Due to the modified wheel track on the railgear equipped vehicle, both front and rear tire and wheel clearances must be checked. With the wheels, tires, supplied adapters, and supplied turning stop blocks installed on the vehicle, ensure that the wheels, tires, and/or balance weights do not contact the vehicle suspension or steering components, the brake lines, the ABS lines and/or any other component/obstruction throughout the entire range of motion of the steering and suspension. It may be necessary to add or remove material from the turning stop blocks and/or to relocate brake lines, ABS lines, and/or other equipment in order to gain adequate clearances. Ensure that any vehicle modifications are done in accordance with the vehicle manufacturer's or their representative's approval.

2. The front brake lines (driver/passenger side) need to be adjusted in order to maintain the proper clearance between the brake line and tire/wheel assembly.
(Refer to Figure 1, Figure 2, and Figure 3)
 - a) Using a tube bender, bend the brake line at the brake calliper approximately 15 - 20 degrees away from the wheel. (Figure 1).
 - b) Bend the brake line support bracket towards the coil spring, leaving a small amount of room between the coil spring and bracket without touching (Figure 2) (Figure 3).
 - c) Check for interference, insure that the brake line tubing and hoses clear the vehicle wheel by a minimum of $\frac{3}{4}$ " when the tires are in the straight position, and that the brake line and ABS line are not stretched throughout the entire range of motion when turning the wheels all the way left, or all the way right.
3. The speedometer will need to be recalibrated due to the change in tire size. Bigger tires will cause your speedometer to register a speed that is slower than your actual speed.
4. The vehicle will need to have a wheel alignment done. After the wheel kit is installed and the railgear is hung.
5. The tire pressure sensors (if equipped) will need to be calibrated to learn new position. For this wheel kit, follow the OEM recommendations as outlined in the vehicle's owner manual.

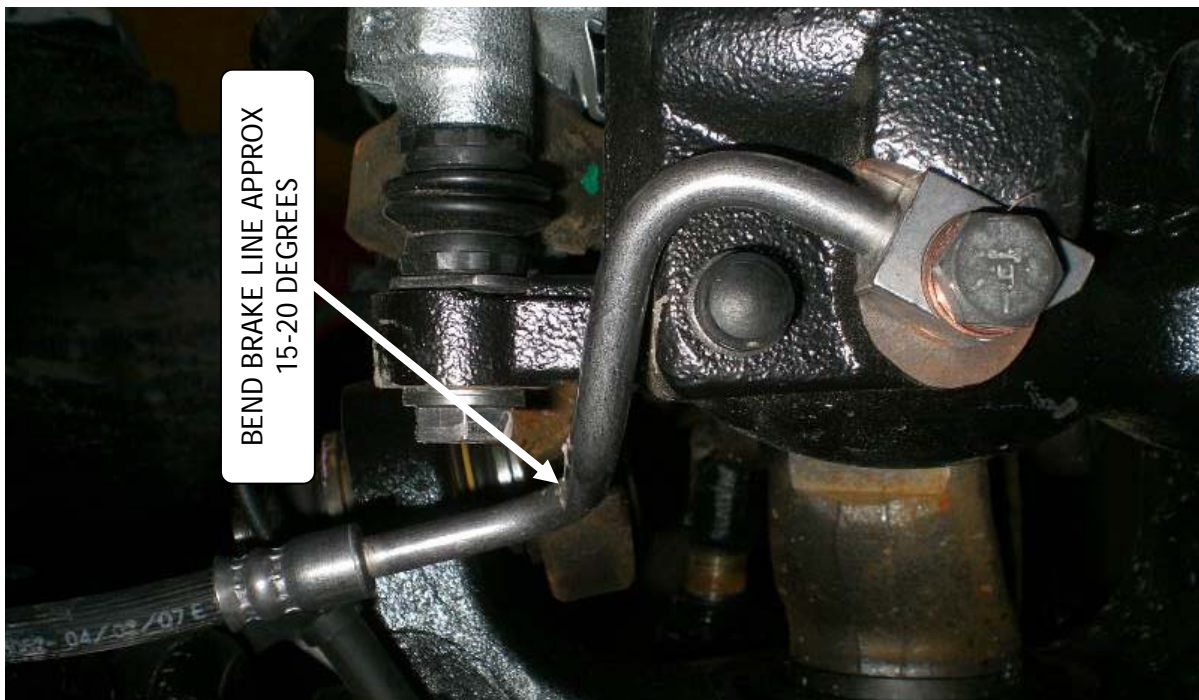


Figure 1
BRAKE LINE BENT AT APPROX. 15-20 DEGREES

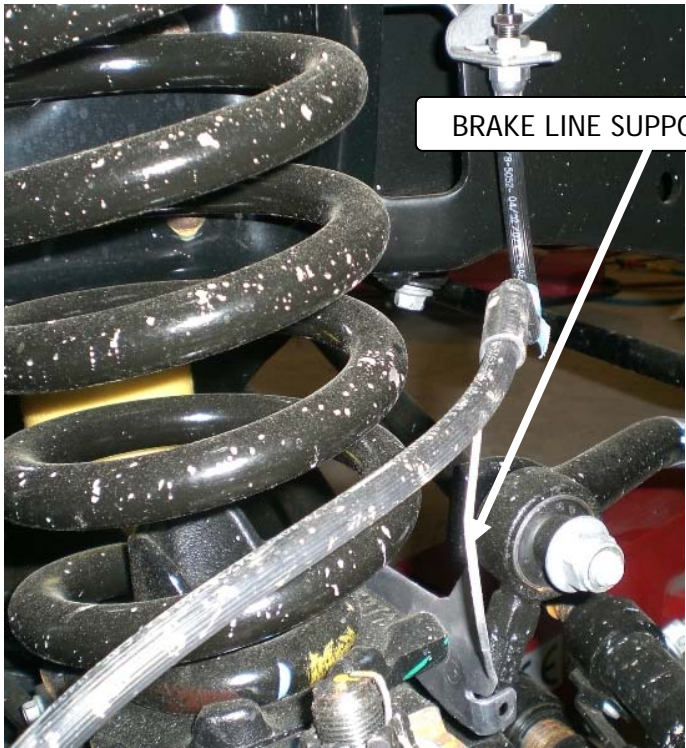


Figure 2

Support Bracket - before bending

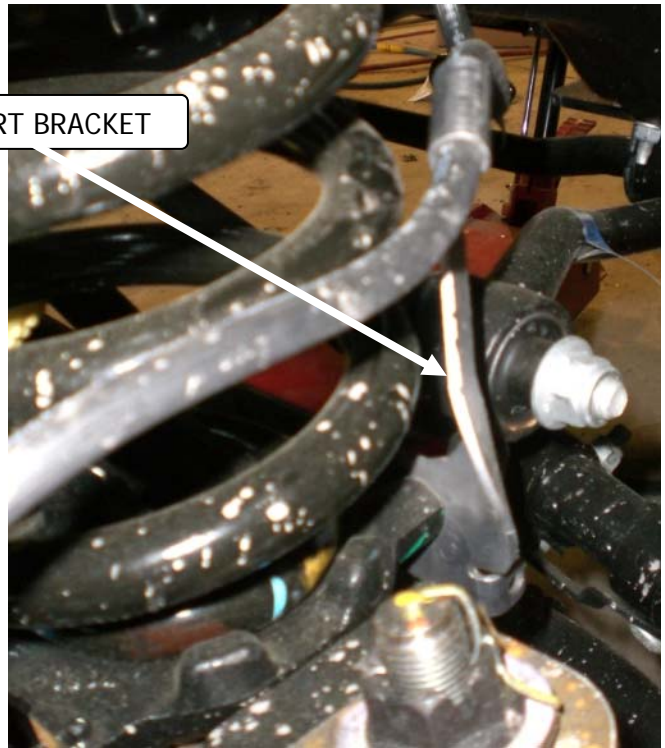


Figure 3

Support Bracket - after bending

OPERATION AND SERVICE OF R-290 WHEEL KIT - STEEL
2008-PRESENT FORD F-250/F-350 4x4
2017-PRESENT AND UP FORD F-250/F-350 4x2

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.
- This vehicle has an increased turning radius and decrease stability and braking ability. Use caution when operating both on road and rail.
- Following the first 100 km (62 Miles) of road and rail travel, the road wheel and adapter lug nuts must be retorqued. Refer to the service section of this manual for the procedure.
- 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 WHEEL KIT |
|---|

With the wheels and tires installed on this vehicle, it may be operated as normal, however caution must be used as the vehicle now has an increased turning radius and decreased stability and braking ability both on road and rail.

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 wheels and tires must be serviced regularly to avoid damage to the equipment. See Table 1 below for Service Recommendations.

If ever vibrations are felt through the vehicle, inspect the balance and alignment of the road wheels and tires.

WARNING/CAUTION

- Never use anti-seize on studs or lug nuts.
- Hand torque to specifications, do not use pneumatic tools.
- Always inspect the condition of the wheel before and after service.
- Loose lug nuts can lead to metal fatigue and ultimately to wheel failure or broken studs.

Table 1: Recommended Service Schedule

| Service Required | Initial 100 km (65 Miles) of road and/or rail use | Daily | Weekly | Monthly | 3 Months |
|---|--|-------|--------|---------|----------|
| Ensure vehicle is in good operating condition as per Mfg. Spec. | | ✓ | | | |
| Check and adjust tire pressure per specification | | | ✓ | | |
| Check wheel lug nut torque 65 miles after service or as specified | ✓ | | | | ✓ |
| Check wheel adapter lug nut torque | ✓ | | | | ✓ |

| |
|---|
| ACCURIDE STEEL WHEEL TORQUE SPECIFICATION: 300 FT-LBS. DRY STEEL WHEEL ADAPTER TORQUE SPECIFICATION: 165 FT-LBS. DRY RECOMMENDED TIRE PRESSURE: 85 PSI |
|---|