

INSTALLATION OF WHEEL KIT - STEEL 2005-2007 FORD F-250/F-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 Industries 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 road wheels and tires required for the vehicle's tires to ride correctly on the rails and avoid contact with the vehicle. The hardware required for this installation is listed in the table below.

Wheel Installation kit

Part Number	Description	Qty
R-2986	Wheel Adapter Assembly	4
S-201502	19.5" x 6.75" Wheel 5.60" Offset	5
S-001015I	300 ft-lbs Wheel & 165 ft-lbs Spacer Decal	5
R-G622	Goodyear G622 RSD - 225/70R19.5 (Not Supplied)	5
S-201602	M20 x 1.5 Two-Piece Flanged Nut	32
R-2699	Turning Stop Block	2
R-990KIT-065	SCREW, UNC, 0.250 X 1.000 HEX CAP Z/Y	2
	NUT, 0.250 REG HEX NYLON INSERT LOCK Z/Y	2
	3/8" WIRE/TUBE CLIP, FASTENAL P/N 0708759	2
	5/8" WIRE/TUBE CLIP, FASTENAL P/N 0708772	2

1. Jack up the vehicle and secure it on jack stands.
2. Remove the original front and rear wheels.
3. Based on rail contact area and load carrying capacity, G&B Specialties Inc. suggests the use of Goodyear G622 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.
4. Affix the supplied wheel and adapter torque decals to the outside face of the wheels.
5. 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.
6. 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.
 - e. Repeat for the remaining wheel adapters.
7. 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.

8. 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.
9. 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.
10. The front brake lines can be tied back using the supplied hardware as follows: (Refer to Figure 1, Figure 2, and Figure 3).
 - a. Using a tube bender, bend the brake line at the brake calliper maximum of 15 degrees away from the wheel, (Figure 1).
 - b. Secure 5/8" P-Clip to coil spring as shown on (Figure 2). Be certain that clip is oriented as shown on Figure 3.
 - c. Secure 3/8" P-Clip to brake line as shown on (Figure 2). Be certain that clip is oriented as shown on (Figure 3).
 - d. Connect both clips with 1/4" Hex Cap Screw, and 1/4" Nylock Nut. The 5/8" P-Clip on coil spring should be held fast to coil spring after 1/4" Fasteners are tightened. The 3/8" P-Clip on the brake line should be snug but should not be too tight as to interfere with the function of the brake line.
 - e. Check for interference, insure that the brake line tubing and hoses clear the vehicle wheel by a minimum of 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.
 - f. Repeat for the other front wheel.

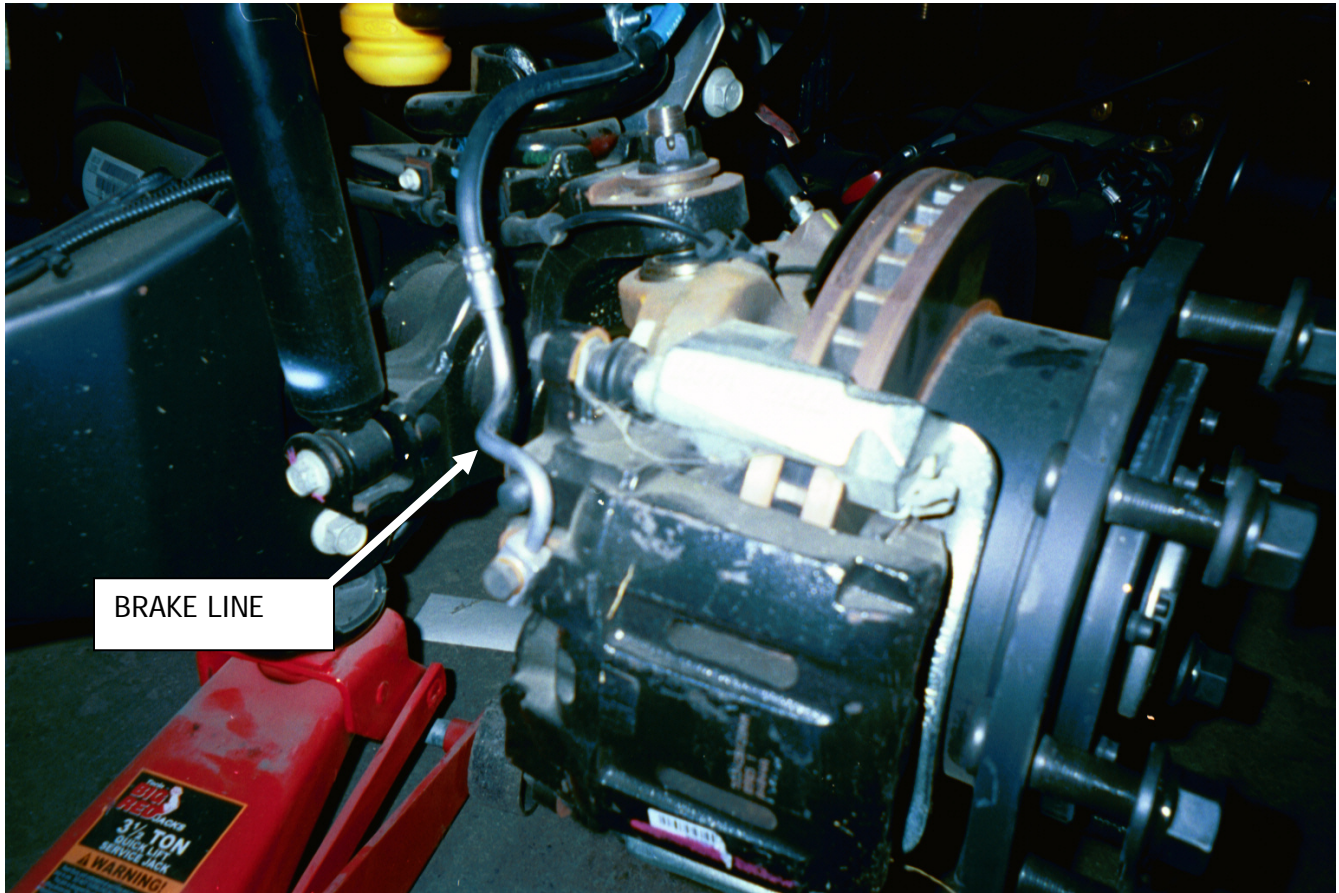


Figure 1: Brake line after 10 to 15 Degree inward bending adjustment.

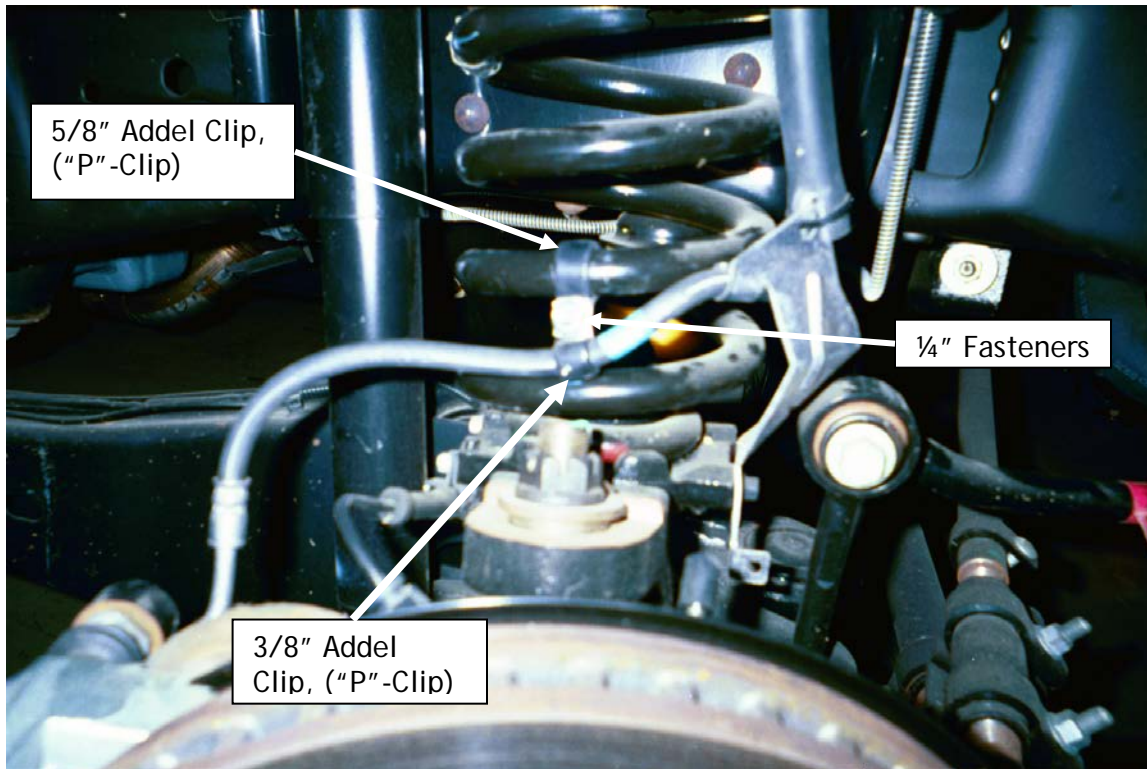


Figure 2: Addel clip (P-clip) location and orientation.
(ONE) 3/8 DIA. ADDEL CLIP (P-CLIP) ADDED TO BRAKE LINE
(ONE) 5/8" , ADDEL CLIP (P-CLIP) ADDED TO COIL SPRING

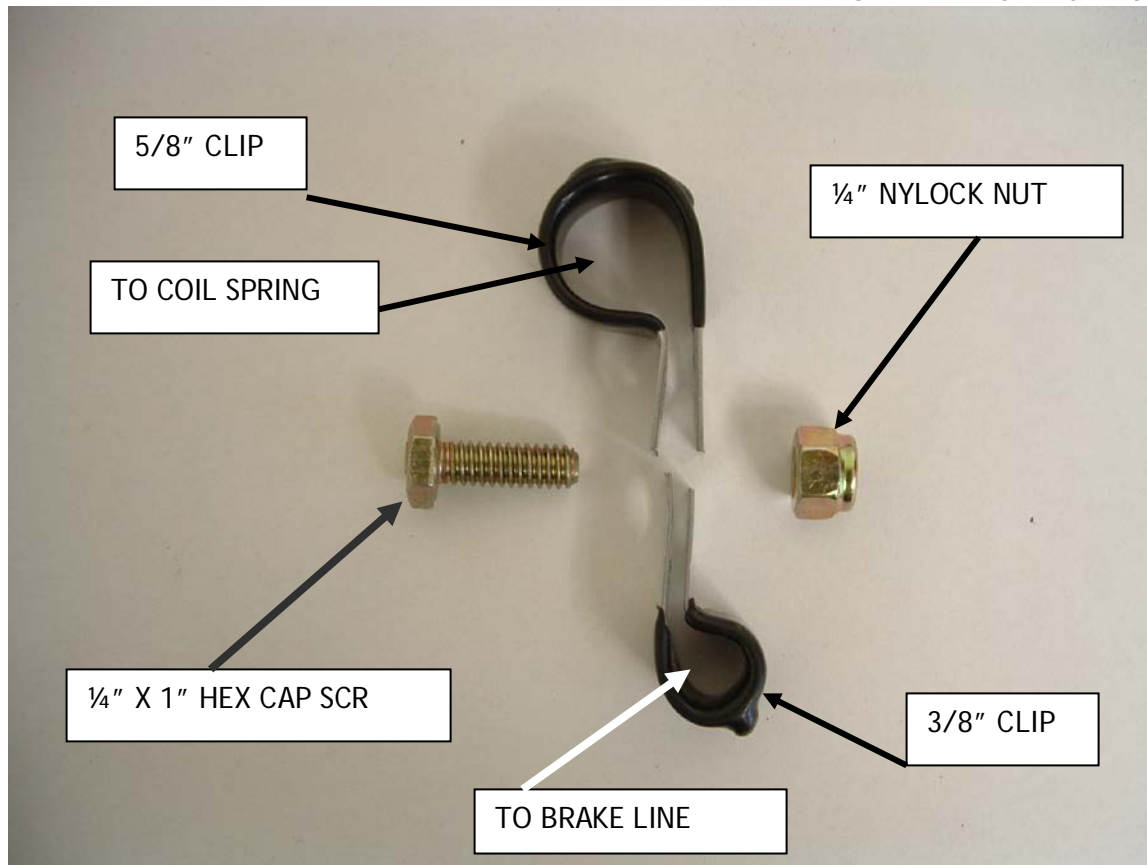
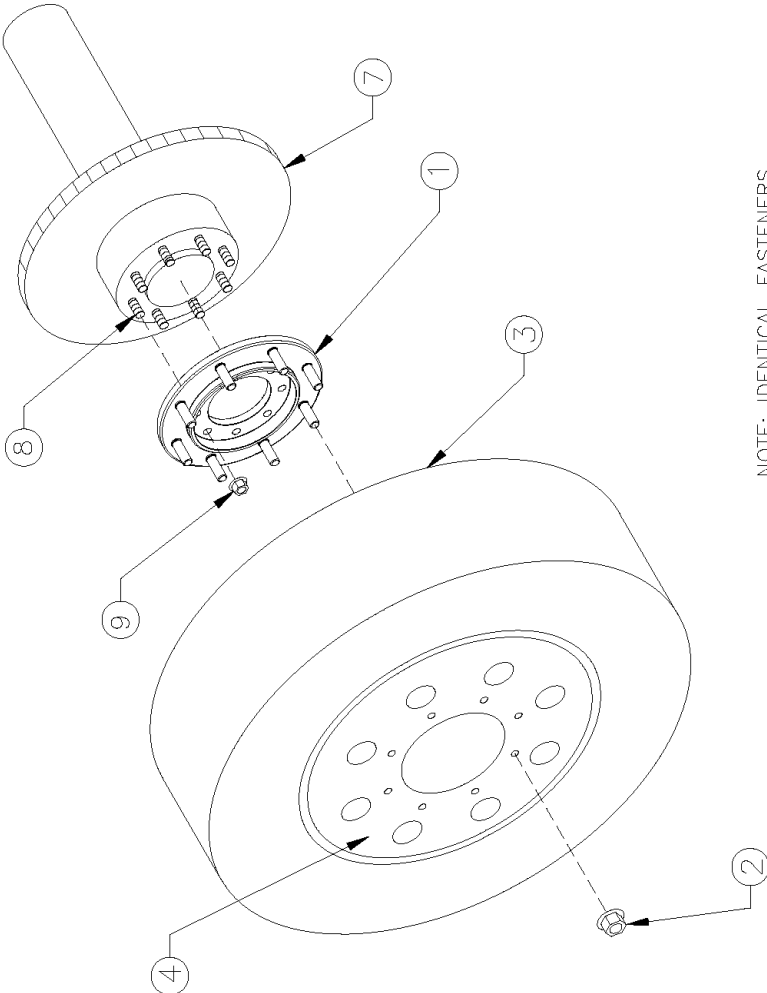


Figure 3: Addel clip (P-clip) assembly.



REV	CHANGE	DATE	BY	APPD
A	ADDED ITEM TO	9/15/05	JL	
B	UPDATED TITLE BLOCK AND BORDER	5/24/19	AB	



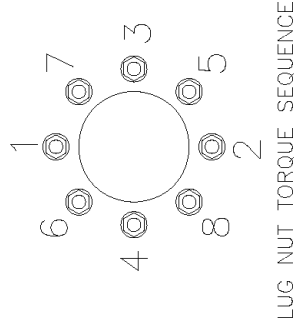
NOTE: IDENTICAL FASTENERS NOT SHOWN FOR CLARITY

WHEEL LUG NUT TORQUE
300 FT-LBS DRY

SPACER NUT TORQUE
165 FT-LBS DRY

RAFNA P/N S-001015J

DETAIL ITEM 5



ITEM	PART NO.	DESCRIPTION	QTY
1	R-2986	WHEEL ADAPTER ASSEMBLY	4
2	S-201602	M20 X 1.5 TWO-PIECE FLANGED NUT	32
3	R-G124A	GOODYEAR G124 - 225/70R19.5 TIRE (NOT SUPPLIED)	5
4	S-201502	19.5" X 6.75" WHEEL X 5.60" OFFSET	5
5	S-001015I	300 FT-LBS WHEEL & 165 FT-LBS SPACER DECAL	5
6	R-2689	TURNING STOP BLOCK (NOT SHOWN)	2
7	-	OEM HUB	N/A
8	-	OEM WHEEL STUD	N/A
9	-	OEM WHEEL LUG NUT	N/A
10	R-990KIT-065	BRAKE LINE FASTENER KIT, (NOT SHOWN)	1

G & B SPECIALTIES INC.
MANUFACTURER OF QUALITY RAILROAD PRODUCTS
BERWICK PENNSYLVANIA (717) 752-5901 FAX (717) 752-6397

DESIGN ~ ENGINEERING ~ MANUFACTURING

ALL DIMENSIONS UNLESS OTHERWISE SPECIFIED ARE IN INCHES (DIMENSIONS DESCRIBED IN THIS DOCUMENT AND THE CONTENTS HEREOF ARE FURNISHED FOR INFORMATION ONLY AND ARE NOT TO BE CONSIDERED IN RESPECT OF THE PRODUCT BEING REPRODUCED OR USED FOR OTHERS. PLEASE REFER TO THE WRITTEN CONSISTENT OF G & B SPECIALTIES INC.

APPROVED: [Signature]

CHECKED: [Signature]

DRAWN: [Signature]

DATE: 9/24/04

REV NUMBER: K-W25XXF010

REASON: B

TOLERANCE ON FINISHED DIMENSIONS UNLESS OTHERWISE SPECIFIED: FRACTIONS DECIMALS

UP TO 6 INCHES	2 PLACE	3 PLACE
± 1/64	± .02	± .005
± 1/32	± .03	± .010
± 1/16	± .06	± .015

ANGULAR DIMENSIONS ± 1/2°

OPERATION AND SERVICE OF WHEEL KIT - STEEL 2005-2007 FORD F-250/F-350 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 Industries 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.

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

SERVICE/INSPECTION REQUIREMENTS

- Visually inspect wheels & tires daily that they are in safe operating condition.
- Check lug nut torque at installation.
- Check the lug nut torque 50 miles (80km) after wheel/tire change and every 6 months thereafter.
- Check/adjust tire pressure as/if required.

TIRE BALANCE/ROTATION

- Balance and Rotate as necessary/recommended by tire manufacturer. Verify that balance weights placed on inside bead of rim are clear of obstructions.

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.

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