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Installation Instructions

Product: Ext+ 15" Rear

Instruction Part Number: 6000471

Vehicle

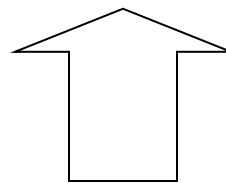
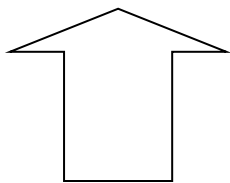
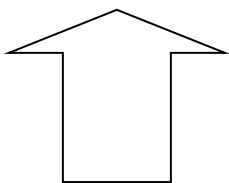
Revision Date: 25 July 2019

Make: Ford

Model: F-150 4x4 / Raptor

Year(s): 2004-2008, 2009-2011 & 2012-Current

ATTENTION: Read this before going any farther! Returns will not be accepted for ANY installed PART or ASSEMBLY. Use great care to prevent cosmetic damage when performing wheel fit check. In the event that a product must be returned, please contact Baer Customer Service for an RMA Number.

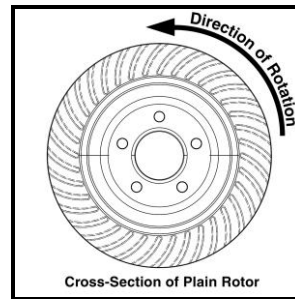
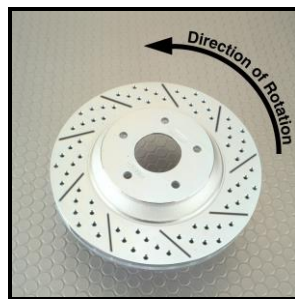


- All installations require proper safety procedures and protective eyewear.
- All installations assume basic mechanical skill and a factory service manual for the vehicle on which the installation is to be performed.
- All references to the "left" side of the vehicle correlate to the driver's side of the vehicle.
- Any installation requiring you to remove a wheel or gain access under the vehicle requires use of jack stands appropriate to the weight of the vehicle. In all cases, jack stands rated for a minimum of 2-tons is recommended.
- A selection of hand tools sufficient to engage in the installation of these products is assumed and is the responsibility of the installer to have in his/her possession prior to beginning this installation. All installations, which require removal of hydraulic hoses and/or bleeding of the brakes, require appropriate fitting/line wrenches, safety catch can, and protective eyewear. Other than these items, if unique or special tools are required, they will be stated appropriately in the installation step.
- ALWAYS CONFIRM WHEEL FIT PRIOR TO BEGINNING INSTALLATION OF ANY BRAKE SYSTEM OR "UPSIZED" ROTOR UPGRADE! In addition to checking wheel fitment (available online at www.baer.com), always place the actual corner assembly or a combination of the caliper assembly onto the rotor, and into the actual wheel. This procedure will reconfirm proper clearance between the caliper and the wheel before proceeding with the actual installation.
- Returns will **not** be accepted for systems that have been partially or completely installed. Use extreme care when checking wheel fitment to prevent any cosmetic damage.

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- When installing rotors on any Baer Products be sure to follow the direction of rotation indicated on the rotor hat area with either an arrow, or an “L” for left, or an “R” for right, or both. “L” or left always indicates the driver’s side of US spec vehicles. Images shown are “L” left rotors:

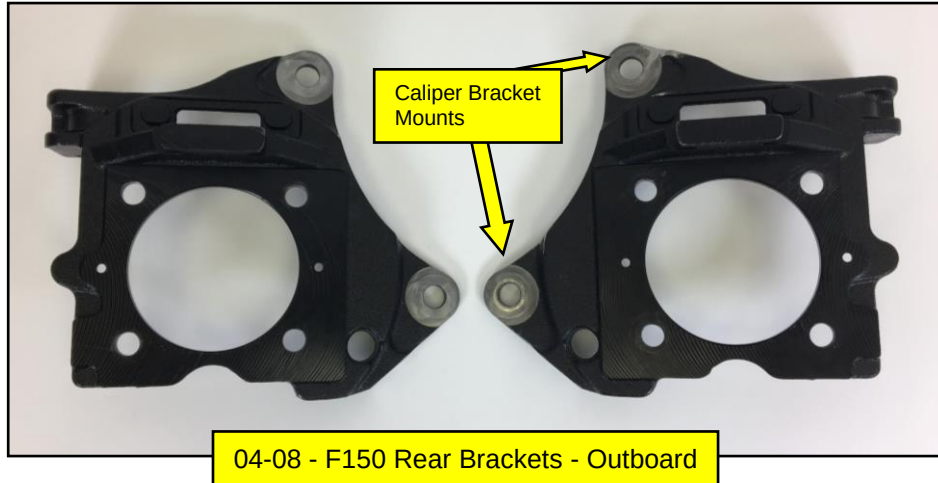


- A proper professional wheel alignment is required for any system requiring replacement of the front spindles, or tie rod ends. Follow factory prescribed procedures and specifications unless otherwise indicated.
- At all times stop the installation if anything is unclear, or the parts require force to install. Consult directly with Baer Technical Staff in such instances to confirm details. Please have these instructions, as well as the part number machined on the component that is proving difficult to install, as well as the make, model, and year (date of vehicle production is preferred) of your vehicle available when you call. Baer’s Tech Staff is available from 8:30-am to 5-pm Mountain Standard Time (Arizona does not observe Daylight Savings Time) at 602 233-1411 Monday through Friday.

IMPORTANT INSTALLATION INFORMATION

For 04-08 F150 only:

Your brake system comes with modified rear F150 park brake/brackets. **You must install these prior to installing your Baer Brake System.** Follow these steps to remove your existing park brake assembly, swap the parts and install the new assemblies:



- You will need to remove the park brake components from your existing rear brackets and re-install them onto the new (modified) brackets supplied by Baer.
- Baer recommends doing these one side at a time and taking pics for reference as you go.
- This is a good time to inspect the shoes and other components for wear and replace as needed.

Removal

- Relieve the tension on the parking brake cable.
2. Remove the rear brake disc.
3. Remove the brake shoe adjuster screw.
4. Remove the brake shoe adjuster screw spring.
5. Remove the 2 brake shoe hold-down springs and 2 pins.
6. Remove the brake shoe retracting spring and the parking brake shoes.

Installation

1. **NOTE:** Lubricate the parking brake shoes where the shoe contacts the wear pad on the backing plate.

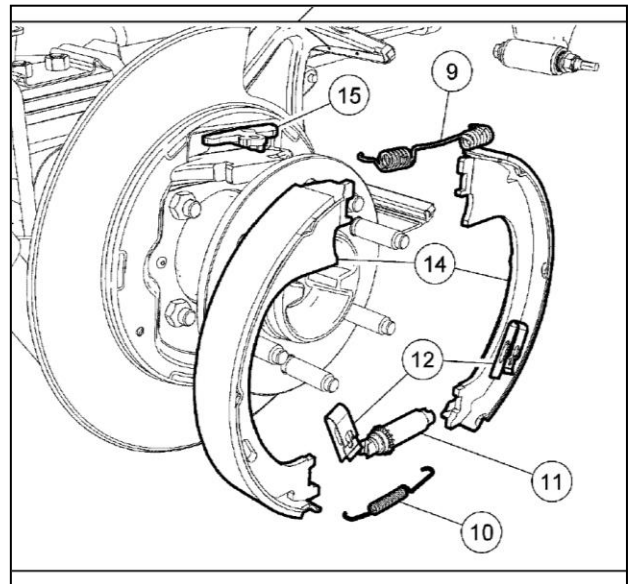
Position the parking brake shoes and attach the retracting spring.

2. Install the 2 brake shoe hold-down pins and springs.
3. Install the brake shoe adjusting screw spring.

4. **NOTE:** Completely retract the parking brake adjusting screw before installation.

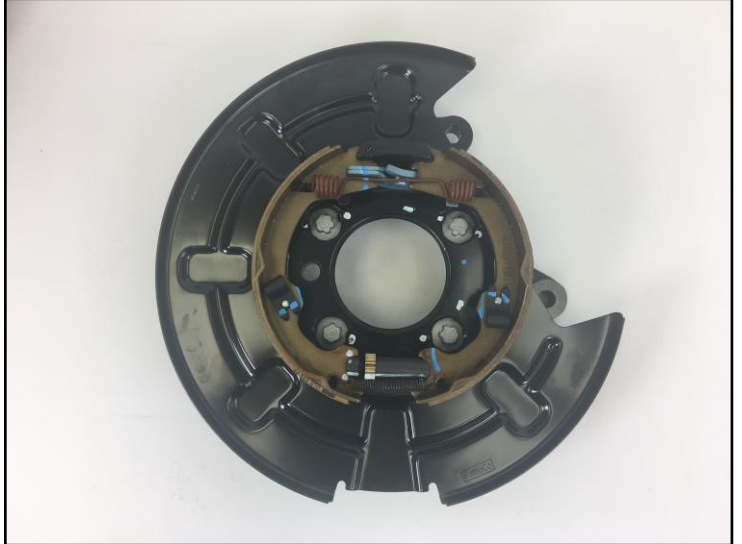
Install the brake shoe adjusting screw.

5. Use the special tool to measure the inside diameter of the parking brake drum.
6. Adjust the parking brake shoe clearance to **0.6 mm (0.02 inch) less than** the inside diameter of the parking brake drum.
7. Make sure that the parking brake shoes are correctly centered by measuring across the center pair of the shoes.



For 09-11 F150 only:

Your brake system comes with later model rear F150 park brake/bracket assemblies. **You must install these prior to installing your Baer Brake System.**



- You will be removing your existing rear park brake assemblies and installing the new assemblies supplied in your brake system.
- You will need to trim the dust shield or remove it completely. This is to allow the new caliper bracket to clear the dust shield with no interference. It is easier to trim this while it is out of the vehicle.

Follow the instructions on the next page.

INSTALLATION FOR 04-11 F150:

1. Disconnect the brake hose at the caliper, discard the copper washers and save the banjo bolt.
Note: To prevent dripping brake fluid during installation, a hose crimper can be used to stop the flow. **Do not** use vise grip pliers as these may damage the hose.
2. Remove the caliper bolts and remove both the caliper and rotor. Disengage the park cable for removal of the original park assembly. The original cable will attach to the supplied new park brake brackets.
3. Remove the differential cover and drain the fluid. Remove the differential pin lock bolt from the carrier (See photos 1 and 2). It is best to use a 6-point 5/16" wrench on this as it may be very tight. Slip the differential pin from the carrier, push each axle inboard and remove the C-clips.

Remove the pin (Fig 2) and slide the axles inward to remove c-clips.



1.

Differential pin retainer bolt



2.

Remove differential pin

4. Remove the axles, taking care not to damage the seals. This is a good time to inspect the seals, axles, bearings and fluid. Replacing as necessary.
5. Remove the nuts/bolts retaining the original park assembly. Disengage the park brake cable from the lever and remove the assembly. Pay attention to the orientation of the bracket removed and install the correct side assembly (Your swapped parts) supplied with your system. Install in place of the original using the factory nuts and bolts. Re-attach the park brake cable. Torque the nuts/bolts to 45 ft-lbs. Repeat these steps for the other axle.
6. With the new park assemblies in place, the axles can be installed, and the C-clips inserted. Install the differential pin and lock bolt. Replace the differential cover and seal it. Refill to proper level with Ford approved gear lube.
7. Next, the debris shield must either be trimmed or removed altogether. If you choose to trim the shield, it is best to eliminate as much material as possible for both proper fitment of the new rotor and improved rotor cooling. **Note:** Be sure to pay close attention to the areas of the debris shield where the Nylock nuts will reside. Ensure that the debris shield does not interfere with the nuts in any way. **See Figures 1 and 2 below for reference.**



Figure 1: OEM caliper mounts



Figure 2: Arc shown for location to trim

INSTALLATION for 09-Current:

8. **This portion starts after you have removed the existing park brake assemblies and have trimmed or removed the dust shield. (See the first section if needed).**

Install the caliper bracket using the supplied Nylock nuts, bolts, washers, and slider pins (M14-2.0 bolts with 14mm washers). The bracket will bolt up to the outboard side of the OEM caliper mounts with the part number facing outboard. ****IMPORTANT:** See Figures 3-5 for proper installation of all hardware. Once properly assembled, simply tighten the bolts until snug as shimming will be needed to center the caliper over the rotor.



Figure 3: Photo shown with proper hardware sequence for 09-Current.
04-08 will also have a washer under the head of the bolt.

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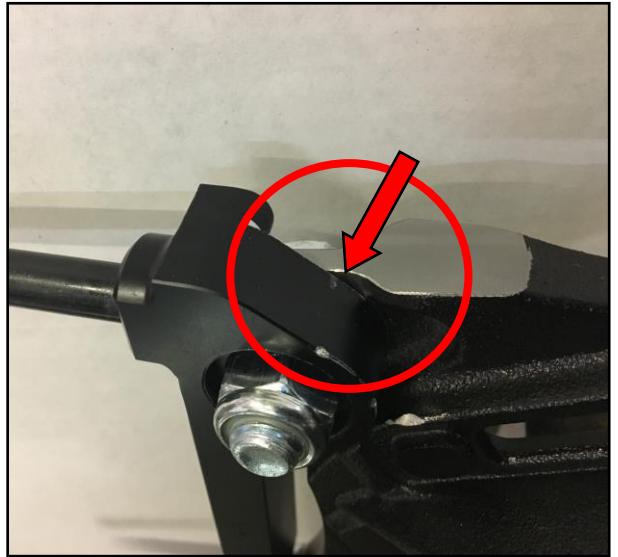
Bolts enter the inboard side of the park assembly, then the slider pins, bracket, washers and nuts.

Note: No washers are required under the bolt heads for 09-Current vehicles. However, you **MUST** use a washer under the head of the bolt if you have an 04-08 F150.



Figure 5: Bracket correctly installed (view from inboard side)

Note: No washers are needed below bolt head on 09-Current F150's.



Check this area for clearance on 04-08 models. If there is interference here, slightly grind the cast Ford park brake bracket.

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Figure 6: Front view

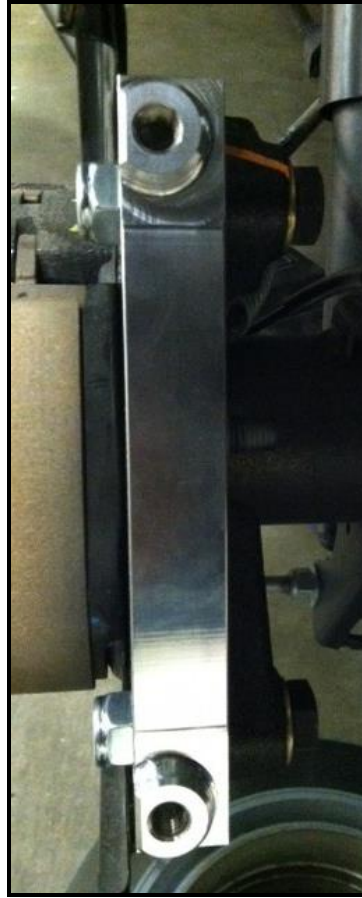


Figure 7: Top view

8. Next, install the correct side rotor, and secure with three lug nuts and washers to prevent scratching the rotor hat.
9. With pads removed, install the correct side caliper (bleed screws point up) onto the radial studs using the ARP washers and nuts. Simply tighten the bolts snugly for now due to shimming. See Figure 10 for installation reference.



Figure 8: ARP studs, washers, and nuts installed

Shimming Procedure

C-clip style rear axle designs allow the axle to move inboard and outboard from .005" to .030". The design of the slide pins on the Baer Caliper bracket allow the caliper to follow this movement but must be adjusted to prevent the caliper body from contacting the rotor surface.

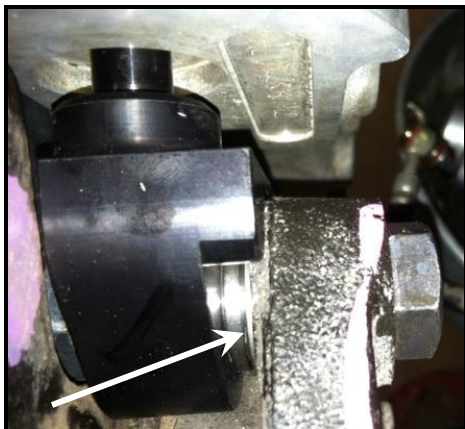
Procedure

1. Pull the axle outboard until it stops (this may not move much) and slide the caliper and bracket inboard, against the stop.
2. Using a feeler gauge, measure between the outboard side of the rotor and the caliper body. The minimum clearance must be at least .020". If this measurement is less, shims will be needed to bring this up to at least .020".

Before installing shims, check the clearance on the inboard side of the rotor. Push the rotor inboard until it stops and slide the caliper outboard, against the stop. Measure the gap between the inboard side of the rotor and the caliper body. The minimum clearance must be at least .020". If the difference in inboard to outboard measurements is very different (ie. .020" outboard with .050" inboard), shims can be used to equalize this. Using that example, a .020" shim between each of the slider pins and the park would decrease the inboard measurement to .030" and increase the outboard measurement to .030". Again, the main goal is not less than .020" clearance between the caliper body and the rotor on both sides. **Figure 11** on the next page indicates proper location of shim placement.

3. Remove the caliper (12-point nuts and washers). Loosen the bolts retaining the caliper bracket slider pins to the park bracket and install the appropriate shims one at a time.
4. Install the caliper again and recheck clearances, the same way described above.
5. When proper clearances are obtained, remove caliper, torque bracket bolts to 110 ft-lbs.
6. Install the pads in the caliper in install the caliper. Torque the 12-point nuts to 75 ft-lbs.

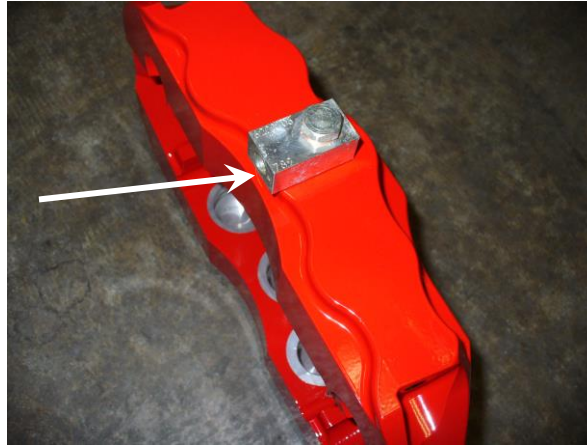
If you do not have access to a dial caliper, these measurements can be made with pads installed using a feeler gauge between the rotor and pad. Take measurements from top inside and outside, then bottom inside and outside. Minimum clearance is .010" between pad and rotor, but gaps as close to equal as possible at all four locations is best.



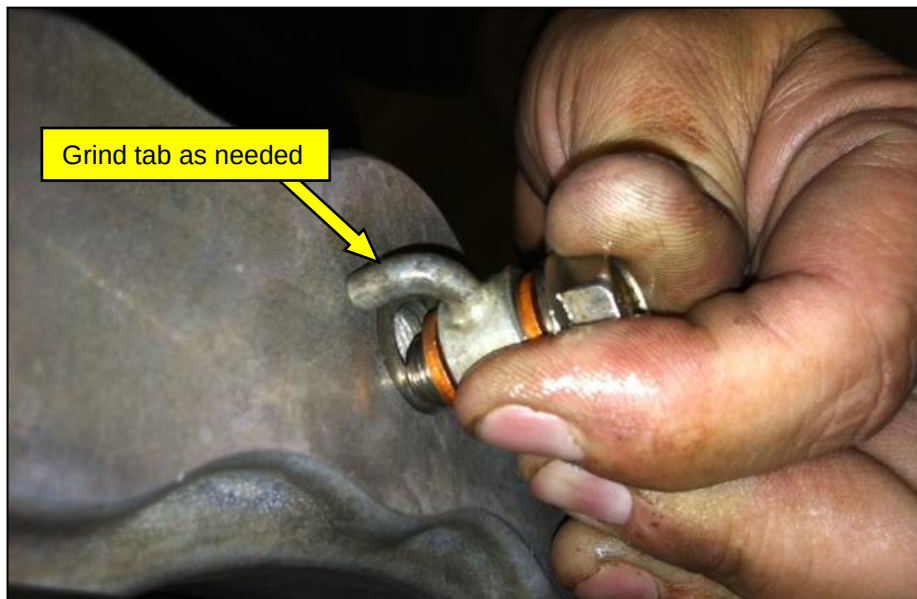
Shim location between slider pin and park assembly.

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10. An adaptor will be installed on the caliper when you receive it. This system will reuse the original brake fluid hose to attach to the adaptor. **The original hose has an indexing pin for the original caliper. If this interferes with the adaptor, it can be ground off for clearance.** The original banjo bolt from the hose will be used to attach the hose to the adaptor. **Always** use the new supplied copper washers on each side of the fitting. These washers are a one time only use item and must be replaced or they are sure to leak. ****IMPORTANT: Ensure to route the brake hose away from suspension and wheels to avoid any interference through full articulation of suspension system.** Torque the banjo bolts on hose and adaptor to 15-20 ft-lbs.



Adaptor attached to caliper. Fluid opening faces inboard.



11. Repeat this process for the opposite side of the vehicle, ensuring to follow each step carefully.

Refer to Bleeding, and Pad Bedding & Rotor Seasoning Procedures contained on a separate sheet, or on www.baer.com

For service components and replacement parts contact your Baer Brake Systems Tech Representative.