

ASSEMBLY INSTRUCTIONS

FOR

TC 6 BIG BRAKE FRONT HAT KIT, WITH 16 INCH VENTED ROTOR

2004 FORD F-150

PART NUMBER

140-9072*

WARNING

INSTALLATION OF THIS KIT SHOULD **ONLY** BE PERFORMED BY PERSONS EXPERIENCED IN THE INSTALLATION AND PROPER OPERATION OF DISC BRAKE SYSTEMS. IT IS THE RESPONSIBILITY OF THE PERSON INSTALLING ANY BRAKE COMPONENT OR KIT TO DETERMINE THE SUITABILITY OF THE COMPONENT OR KIT FOR THAT PARTICULAR APPLICATION.

RACING EQUIPMENT AND BRAKES MUST BE MAINTAINED AND SHOULD BE CHECKED REGULARLY FOR FATIGUE, DAMAGE AND WEAR.



FOR OFF ROAD USE ONLY

BEFORE OPERATING VEHICLE, TEST THE BRAKES UNDER CONTROLLED CONDITIONS. MAKE SEVERAL STOPS IN A SAFE AREA FROM LOW SPEEDS AND GRADUALLY WORK UP TO RACING SPEEDS. **DO NOT RACE ON UNTESTED BRAKES!** ALWAYS UTILIZE SAFETY RESTRAINT SYSTEMS WHILE OPERATING VEHICLE.

IMPORTANT

READ DISCLAIMER OF WARRANTY INCLUDED IN THE KIT.

WARNING: Some cleaners may stain or remove the finish on brake system components. Test the cleaner on a hidden portion of the component before general use.

*DRILLED SRP ROTORS AVAILABLE; ADD "-D" TO END OF PART NUMBER WHEN ORDERING

Important Notice

Before any tear-down or disassembly begins, review the wheel clearance diagram, Figure 2, next page to verify that there is adequate clearance with the wheels you will be using with this installation.

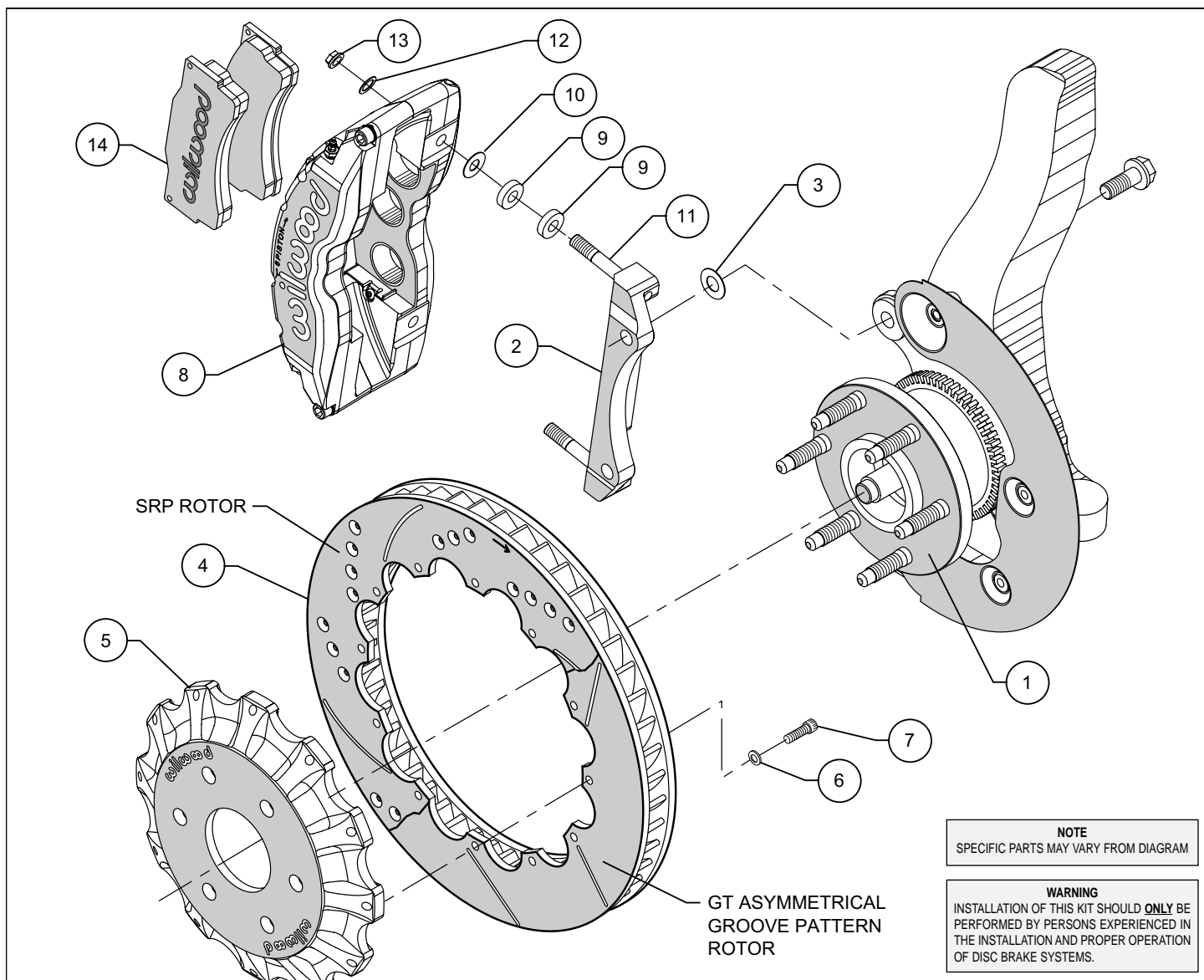


Figure 1. Typical Installation Configuration

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	270-9035	Hub	2
2	250-9067	Bracket, Caliper Mounting	2
3	240-9074	Washer, .640 I.D. x 1.12 O.D. x .024 Thick	12
4	160-8953/54	Rotor, GT 1.38" x 16.00" Dia, 12 x 10.75" Bolt Circle (one each, right and left)	2
4A	160-8955/56	Rotor, SRP Drilled and Slotted (one each, right and left)	2
5	170-9066	Hat	2
6	240-0541	Washer, .329 I.D. x .561 O.D. x .056 Thick	24
7	230-2043	Bolt, 5/16 x 18 x .75 Long, HXHD	24
8	120-8909/10-RS	Caliper, Superlite TC	2
9	300-6992	Spacer, .450 I.D. x 1.000 O.D. x .250 Thick	8
10	240-1848	Washer, .441 I.D. x 1.003 O.D. x .03 Thick	12
11	230-9062	Stud, 7/16-14 x 7/16-20-24 x 3.25 Long (pre installed in bracket)	4
12	240-9069	Washer, .453 I.D. x .750 O.D.	4
13	230-5686	Nut, Self-Locking Hex Head, 7/16 x 20	4
14	15Q-8823K	Pad, PolyMatrix "Q" Compound, Axle Set	1

NOTES:

Part Number 230-9068 Rotor Bolt Kit, includes part numbers 230-2043 and 240-0541

Part Number 250-9064 Caliper Bracket Kit, includes P/N's 230-9062, 230-5686, 240-1848, 240-9069 240-9074, 250-9067 & 300-6992

Item 5A is an optional item and included with the "D" kits. Add "-D" to end of part number when ordering.

Wilwood offers an optional Braided Stainless Steel Hose Kit. Order part number 220-9073 (not included in kit)

General Information, Disassembly and Assembly Instructions

Installation of this kit should **ONLY** be performed by persons experienced in the installation and proper operation of disc brake systems. Before installation begins, please read the complete procedure thoroughly to familiarize yourself with the process, and double check the following items to ensure a trouble-free installation.

- Make sure this is the correct kit to match the exact make and model year of the vehicle's spindle.
- Verify the hat stud pattern in this kit matches the bolt pattern of the vehicle's hubs.
- Verify your wheel clearance using Figure 2.
- Inspect the package contents against the parts list to ensure that all components and hardware are included.

Disassembly

- Disassemble the original equipment front brakes:
Raise the front wheels off the ground and support the front suspension according to the vehicle manufacturer's instructions.

Remove the wheel. Remove the two bolts that hold the stock caliper mounting bracket to the spindle. Lift off the bracket and stock caliper as one unit, then slide off the stock hat and rotor assembly. On some models you may have to unbolt the stock caliper from the caliper bracket before removal. Remove the hub nut and slide off the hub assembly. Save the hub nut for use during reassembly.

- Thoroughly clean and de-grease the spindles while removing any nicks or burrs.

Assembly Instructions (numbers in parenthesis refer to the parts list/diagram on the preceding page):

- Slide the new hub assembly (1) into place and secure with original hub nut. Torque to manufacturer's specification.

- The caliper mounting bracket assembly (2) should be installed first with clean, dry threads on the mounting bolts. Install the bracket from the outboard side of the spindle by sliding the stock bolt through from the backside. Place shim washer (3) between the bracket (2) and the spindle (see Figure 1). The bracket must tighten squarely against the side of the spindle body. Inspect for interference from casting irregularities, machining ridges, burrs, etc. Use one thin shim (3) between the bracket (2) and spindle during initial trial fitting.

- With the larger I.D. side of the rotor (4) facing away from the hat (5), bolt rotor (4) to hat (5) through the backside of the rotor using washers (6) and bolts (7). Torque bolts (7) in an alternating sequence to 180 **in-lb**. Safety wire bolts (7) using standard 0.032 inch diameter stainless steel safety wire as shown in Figure 3. Please refer to Wilwood's data sheet DS-386 (available at www.wilwood.org/ds386.pdf) for complete safety wire installation instructions. Slide the rotor/hat assembly onto the spindle. Check to be sure the hat seats squarely against the hub. Install a couple of lug nuts (finger tighten) to keep the rotor/hat assembly in place while continuing with the installation.

- Install two spacers (9) and one shim washer (10) over each pre-installed stud (11) on the radial mount bracket (2). Slide the caliper (8) in place over the studs and rotors and install the washer (12) and lock nut (13) to hold the caliper in place. The caliper bleed screws should be pointing up. Snug the lock nuts (13) and check that the rotor (4) is centered in the caliper (8). Add or subtract .024" shims (3) as necessary between the caliper mounting bracket (2) and the spindle to center the caliper (8).

- Remove the two caliper center bridge pad retainer bolts, nuts, tubes, and anti-rattle clips from the caliper. Slide the brake pads (14) into place. They should install easily without interference. Check that the outside radius of the brake pad is aligned with the outside diameter radius of the rotor face. Add or subtract shims (10) between the caliper and mount bracket to gain the proper alignment. Reinstall the first center bridge pad retainer and tube while sliding the bolt thru the mounting holes on the end of the anti-rattle clip, screw on the locknut. Push the opposite end of the anti-rattle clip downward and secure the second center bridge pad retainer tube, bolt and locknut on top of the anti-rattle clip, thus holding it firmly against the brake pads. The locknut should be snug without play in the bolt or tube. Be cautious not to over tighten.

- Remove the lug nuts that were holding the hat in place. Install the wheel and torque the lug nuts to specification. Check to see that the wheel rotates freely without interference.

- Once all clearances have been checked, remove the wheel, caliper, hat, and rotor from the spindle and hub. Secure the caliper mounting bracket (2) to the spindle with original bolts using red *Loctite*[®] 271. Torque the bolts to 90 ± 5 ft-lb. Reinstall the hat and rotor assembly and again use lug nuts to hold it in place. Reinstall the caliper and torque the caliper nuts (14) to 47 ft-lb.

- **NOTE:** The caliper inlet hole has a 1/8-27 NPT thread. A steel adapter fitting, straight or 90° elbow, should be installed in the caliper. Stainless steel braided flex line with enough length to allow the wheels to turn lock to lock without straining or pinching the line should be used to fabricate new brake hoses. Wilwood offers a hose kit, P/N 220-9073, which includes hoses, fittings, etc., all in one package. **THE ORIGINAL EQUIPMENT PRODUCTION RUBBER BRAKE HOSES WILL NOT ADAPT TO WILWOOD CALIPERS AND ARE NOT RECOMMENDED.**

- Bleed the brake system (reference additional information below as necessary).

- Remove the lug nuts that were used to hold the rotor/hat assembly in place during caliper installation. Install the wheel and lug nuts, torque to OEM specifications.

- Repeat the entire procedure for the other wheel.

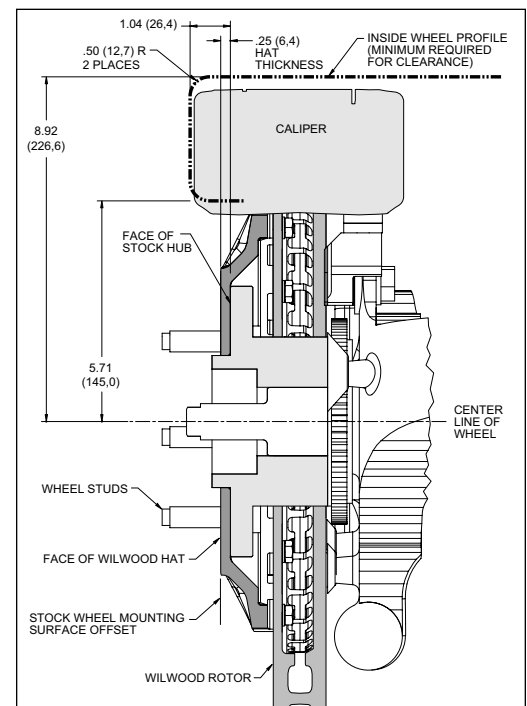


Figure 2. Wheel Clearance Diagram

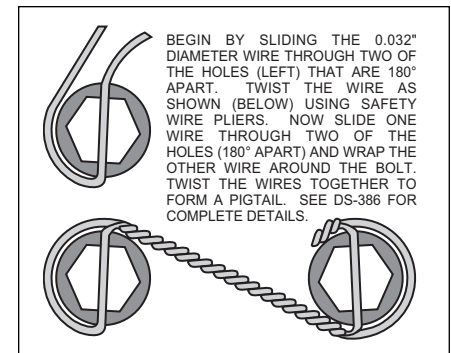


Figure 3. Safety Wire Diagram

Additional Information and Recommendations

•**NOTE:** With the installation of after market disc brakes, the wheel track may change depending on the application. Check your wheel offset before final assembly.

•Please read the following concerning balancing the brake bias on 4 wheel disc vehicles.

This Ford F-150 truck kit can be operated using the stock OEM master cylinder. However, as with most suspension and tire modifications (from OEM specifications), changing the brakes may alter the front to rear brake bias. Rear brakes should not lock up before the front. Brake system evaluation and test should be performed by persons experienced in the installation and proper operation of brake systems. Evaluation and test should be performed under controlled conditions. Make several stops from low speeds and gradually work speeds up. Always utilize safety restraint systems while operating vehicle.

•For optimum performance, fill and bleed the new system with Wilwood Hi-Temp° 570 grade fluid or EXP 600 Plus. For severe braking or sustained high heat operation, use Wilwood EXP 600 Plus Racing Brake Fluid. Used fluid must be completely flushed from the system to prevent contamination. **NOTE:** Silicone DOT 5 brake fluid is **NOT** recommended.

•To properly bleed the brake system, begin with the caliper farthest from the master cylinder. Bleed the outboard bleed screw first, then the inboard. Repeat the procedure until all calipers in the system are bled, ending with the caliper closest to the master cylinder. If the caliper is fitted with bleed screws on four corners, make sure the bottom bleed screws are tight. Only bleed from the top bleed screws. **NOTE:** When using a new master cylinder, it is important to bench bleed the master cylinder first.

•Test the brake pedal. It should be firm, not spongy, and stop at least 1 inch from the floor under heavy load.
If the brake pedal is spongy, bleed the system again.

If the brake pedal is initially firm, but then sinks to the floor, check the system for leaks. Correct the leaks (if applicable) and then bleed the system again.

If the brake pedal goes to the floor and continued bleeding of the system does not correct the problem, either air may be trapped in the system, or a master cylinder with increased capacity (larger bore diameter) may be required. Wilwood offers various lightweight master cylinders with large fluid displacement capacities (custom fabricated mounting may be required).

PAD BEDDING PROCEDURE:

•Pump brakes at low speed to assure proper operation. On the race track, or other safe location, make a series of hard stops until some brake fade is experienced. Allow brakes to cool while driving at moderate speed to avoid use of the brakes. This process will properly burnish the brake pads, offering maximum performance.

Associated Components

Bolt Torque Specifications

PART NO.	DESCRIPTION
260-1874	Wilwood Residual Pressure Valve (2 lb for disc brakes)
260-1876	Wilwood Residual Pressure Valve (10 lb for drum brakes)
260-8419	Wilwood Proportioning Valve
290-0632	Wilwood Racing Brake Fluid (Hi-Temp° 570) (12 oz)
290-6209	Wilwood Racing Brake Fluid (EXP 600 Plus) (16.9 oz)
340-1285	Wilwood Floor Mount Brake Pedal (with balance bar)
340-1287	Wilwood Swing Mount Brake Pedal (with balance bar)
260-6764	Wilwood 3/4 inch High Volume Aluminum Master Cylinder
260-6765	Wilwood 7/8 inch High Volume Aluminum Master Cylinder
260-6766	Wilwood 1 inch High Volume Aluminum Master Cylinder
260-8555	Wilwood 1 inch Aluminum Tandem Chamber Master Cylinder
260-8556	Wilwood 1-1/8 inch Aluminum Tandem Chamber Master Cylinder
270-2016	Quick Release Steering Hub (3/4 inch shaft)
270-2017	Quick Release Steering Hub (5/8 inch shaft)
220-9073	Flexline Kit, Ford F-150 Truck

BOLT SIZE	TORQUE
1/4-20	85 in-lb
1/4-28	103 in-lb
5/16-18	180 in-lb
5/16-24	198 in-lb
3/8-16	22 ft-lb
3/8-24	30 ft-lb
7/16-14	42 ft-lb
7/16-20	47 ft-lb
1/2-13	65 ft-lb
1/2-20	77 ft-lb
9/16-12	95 ft-lb
9/16-18	105 ft-lb
5/8-11	110 ft-lb
5/8-18	120 ft-lb

NOTE: This bolt torque specification list is for use with specific grades of bolts as supplied in the particular Wilwood kit and is not intended as a guide for any other application.