

# ASSEMBLY INSTRUCTIONS

FOR

## DYNAPRO PRO SERIES REAR KIT FOR OE PARKING BRAKE WITH 12.19" DIAMETER VENTED ROTOR

**2004 - PRESENT PONTIAC GTO**

PART NUMBER GROUP

**140-8754**

### 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.



### WARNING

#### **DO NOT OPERATE ANY VEHICLE ON UNTESTED BRAKES!**

BEFORE OPERATING VEHICLE, TEST THE BRAKES UNDER CONTROLLED CONDITIONS IN A SAFE AREA. TEST THE SYSTEM IN STATIC CONDITIONS FOR PROPER PEDAL HEIGHT AND THE ABILITY TO HOLD PRESSURE BEFORE ATTEMPTING TO MOVE THE VEHICLE. MAKE SEVERAL STOPS IN A SAFE AREA AT SLOW SPEEDS AND GRADUALLY WORK UP TO NORMAL OPERATING CONDITIONS. **ALWAYS** UTILIZE SAFETY RESTRAINT SYSTEMS AND ALL OTHER REQUIRED SAFETY EQUIPMENT WHILE OPERATING THE VEHICLE.

### IMPORTANT

READ THE 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.

## Important Notice - Read This First

Before any tear-down or disassembly begins, review the following information:

- Please be aware there are modifications necessary to the stock hub/caliper mounting bracket - dust shield assembly, Figure 3. Also, review the wheel clearance diagram, Figure 2, to verify there is adequate clearance with the wheels you will be using with this installation.
- Rear brake kits are not supplied with hydraulic lines or fittings and may require the purchase of additional lines or fittings to complete the installation. Wilwood offers an extensive listing of brake lines and fitting on our web site: [www.wilwood.com](http://www.wilwood.com).
- Rear brake kits are not supplied with parking brake cables hardware or adapters. Please see the note in the assembly instructions for vendor recommendations to purchase these parts.
- Due to OEM production differences and other variations from vehicle to vehicle, the fastener hardware and other components in this kit may not be suitable for a specific application or vehicle.
- It is the responsibility of the purchaser and installer of this kit to verify suitability / fitment of all components and ensure all fasteners and hardware achieve complete and proper engagement. Improper or inadequate

## Exploded Assembly Diagram

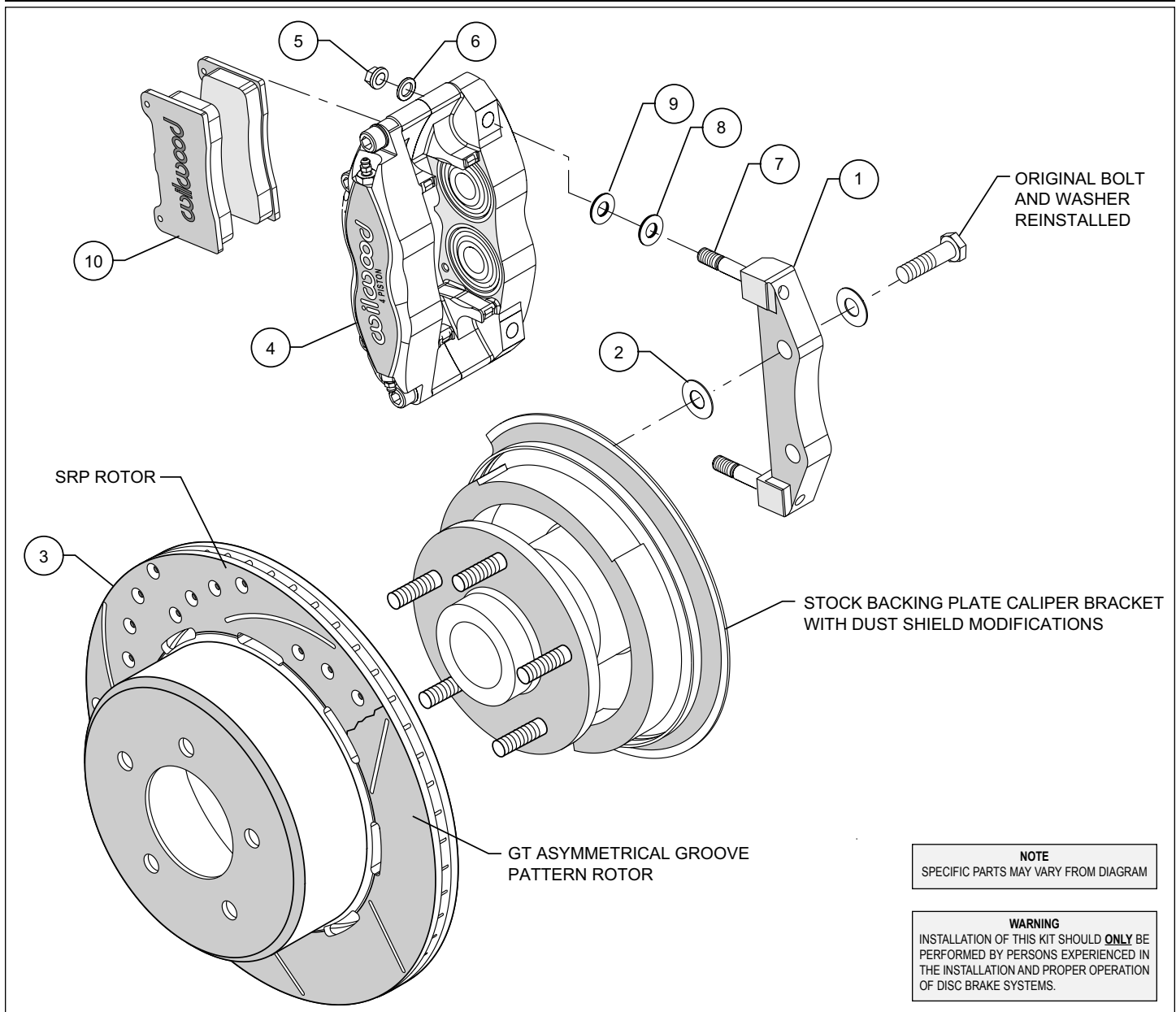


Figure 1. Typical Installation Configuration

## Price List

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	250-8760	Bracket, Caliper Mounting	2
2	240-6320	Washer, 1-1/32 inch	8
3	160-8743	Rotor, .81" Thk x 12.19" Dia, 5 x 4.75" Bolt Circle	2
3A	160-8744/45	Rotor, Drilled and Slotted, Right and Left	2
4	120-7374	Caliper, DynaPro	2
5	230-9183	Nut, Self-Locking Hex Head	4
6	240-2510	Washer, flat, 5/8 inch	4
7	230-9078	Stud, 3/8-16 x 3/8-24 x 2.5 Long (pre installed in bracket)	4
8	240-6002	Washer, 3/4 inch, .020 thick shim	20
9	240-3813	Washer, 3/4 inch, .030 thick shim	8
10	150-8946K	Pad, BP-10, Axle Set	1

### NOTES:

Part Number 250-8761 Caliper Bracket Mounting Bolt Kit, includes P/N's 230-9183, 230-9078, 240-6320, 240-2510, 240-6002 & 250-8760  
 Item 3A 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 220-8755 (not included in kit)

## General Information, Disassembly / Dust Shield Modifications 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 rear brakes:  
 Raise the rear wheels off the ground and support the rear 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.

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

### Dust Shield Modifications

- These modifications should be performed by a qualified machinist. Refer to Figure 3, next page. Only one view of the dust shield is shown, but the modifications need to be performed on both rear axles.
- Cut away the complete outside perimeter of the dust shield material down to the 9.25 (235,0) diameter point, measured from the center of the axle. This task can be accomplished without removal of the dust shield from the vehicle. Make sure that the cut is smooth and the remaining material is free from any rust, debris, burrs, machining irregularities, etc.

**Assembly Instructions** (numbers in parenthesis refer to the part list/diagram on the preceding page): **CAUTION:** All mounting bolts must fully engage insert nuts. Be sure to check that all bolts are either flush or protruding through flanged side of insert nut after shimming.

- The caliper mounting bracket assembly (1) should be installed first with clean, dry threads on the mounting bolts. Install the bracket from the rear side of the spindle by sliding the original stock bolts through the washer and bracket(1). Place shim washer (2) between the bracket (1) 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 (2) between the bracket (1) and spindle during initial trial fitting.

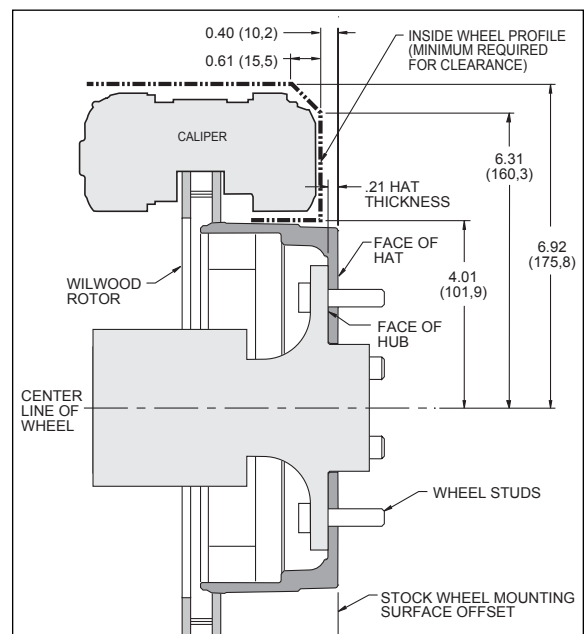
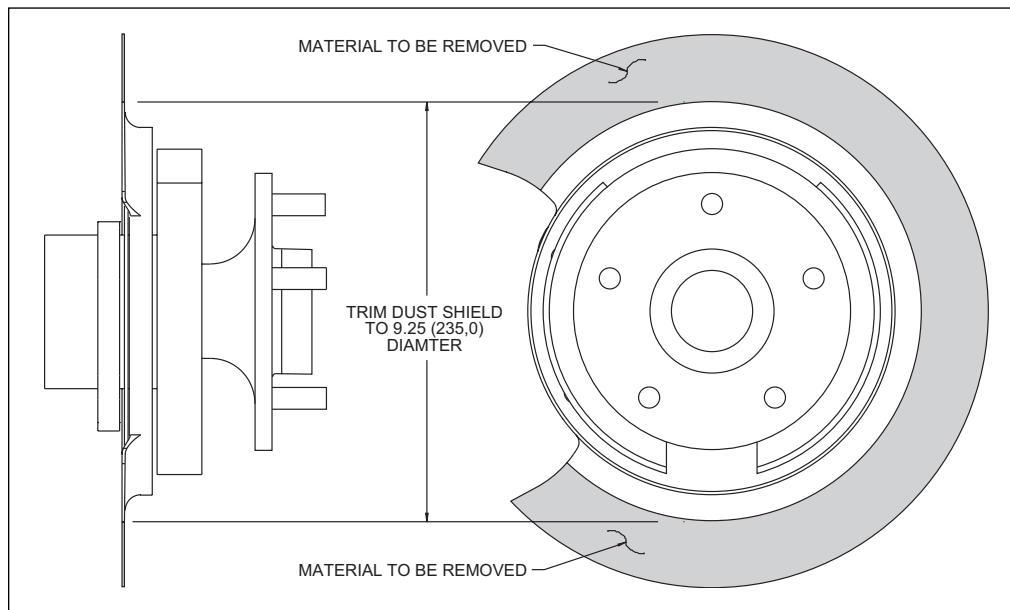


Figure 2. Wheel Clearance Diagram

## Assembly Instructions (Continued)

- Slide the rotor(3) onto the axle. Check to be sure the hat seats squarely against the hub. Install a couple of lug nuts (finger tighten) to keep the rotor(3) in place while continuing with the installation.

- NOTE:** Please reference the caution statement at the beginning of the assembly instructions. Install one washer (8) and one washer (9) over each pre-installed stud (7) on the radial mount bracket (1). Slide the caliper (4) in place over the studs and rotor and install the washer (6) and lock nut (5) to hold the caliper in place. The caliper bleed screws should be pointing up. Snug the lock nuts (5) and check that the rotor (3) is centered in the caliper (4). Add or subtract .02" shims (9) as necessary between the caliper mounting bracket (1) and the axle to center the caliper on the rotor.



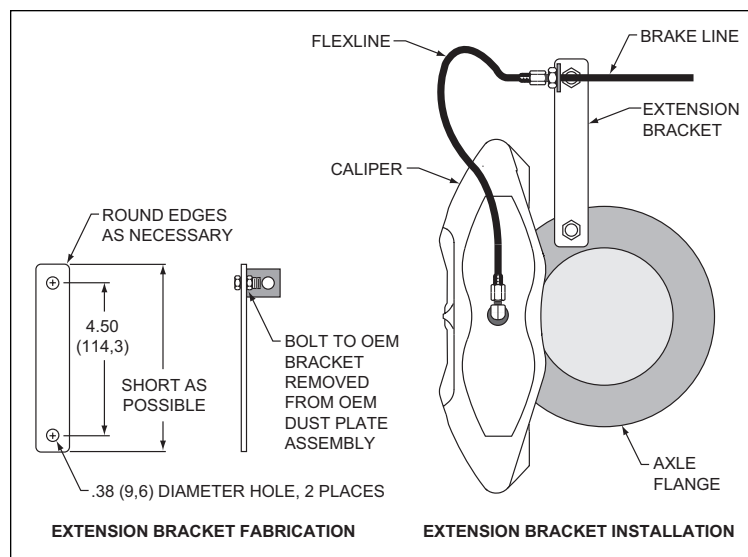
**Figure 3. Dust Shield Modifications**

- Remove the caliper quick-clip pad retainer from the caliper. Slide the brake pads (10) 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 (2) between the caliper and mount bracket to gain the proper alignment. Reinstall the quick-clip pad retainer.

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

- Once all clearances have been checked, remove the wheel, caliper, and rotor from the spindle and hub. Secure the caliper mounting bracket (1) to the spindle with original stock bolt using red *Loctite*® 271. Torque the bolts to manufacturers specifications. Reinstall the rotor and again use lug nuts to hold it in place. Lubricate caliper mounting studs and nuts with lightweight oil, reinstall the caliper, torque the caliper nuts (5) to 30-35 ft-lb.

- NOTE:** OEM rubber brake hoses will not adapt to Wilwood calipers and should not be used. The caliper inlet fitting is a 1/8-27 NPT. Use steel adapter fittings at the caliper, either straight, 45 or 90 degree and enough steel braided line to allow for full suspension travel. **Carefully route lines to prevent contact with moving suspension, brake, or wheel components.** Periodically check hose and components for any wear. Wilwood brake and hose kits are designed for use in many different vehicle applications and it is the installer's responsibility to properly route and ensure adequate clearance and retention for brake hose components. Wilwood offers a hose kit, P/N 220-8755, which includes hoses, fittings, etc., all in one package. Dependent on the application, line kit installation may require a support bracket to be fabricated, then bolted in place to support the original hardline (not included in kit), see Figure 4.



**Figure 4. Brake Line Bracket Fabrication / Installation**

- Bleed the brake system. Reference the general information and recommendations on the last page for proper bleeding instructions.

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

- Repeat the entire procedure for the other wheel.

## 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 GTO 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 tests should be performed by persons experienced in the installation and proper operation of brake systems. Evaluation and tests should be performed under controlled conditions. Start by making several stops from low speeds then gradually work up to higher speeds. Always utilize safety restraint systems while operating vehicle.

•For optimum performance, fill and bleed the new system with Wilwood Hi-Temp<sup>°</sup> 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

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 <sup>°</sup> 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)
220-8755	Flexline Kit, GTO

### Bolt Torque Specifications

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.