

ASSEMBLY INSTRUCTIONS
FOR
W6A CALIPER, BRACKET, AND BRAKE PAD BRAKE KIT
SPECIFICALLY FOR Z51 340mm ORIGINAL EQUIPMENT ROTOR

1997 - 2004 CHEVROLET C-5 CORVETTE
2005 - PRESENT CHEVROLET C-6 / Z06 CORVETTE

PART NUMBER GROUP

140-12629

**DISC BRAKES SHOULD ONLY BE INSTALLED BY SOMEONE
EXPERIENCED AND COMPETENT IN THE INSTALLATION AND
MAINTENANCE OF DISC BRAKES**
READ ALL WARNINGS

WARNING

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. IF YOU ARE NOT SURE HOW TO SAFELY USE THIS BRAKE COMPONENT OR KIT, YOU SHOULD NOT INSTALL OR USE IT. DO NOT ASSUME ANYTHING. IMPROPERLY INSTALLED OR MAINTAINED BRAKES ARE DANGEROUS. IF YOU ARE NOT SURE, GET HELP OR RETURN THE PRODUCT. YOU MAY OBTAIN ADDITIONAL INFORMATION AND TECHNICAL SUPPORT BY CALLING WILWOOD AT (805) 388-1188, OR VISIT OUR WEB SITE AT WWW.WILWOOD.COM. USE OF WILWOOD TECHNICAL SUPPORT DOES NOT GUARANTEE PROPER INSTALLATION. **YOU**, OR THE PERSON WHO DOES THE INSTALLATION MUST KNOW HOW TO PROPERLY USE THIS PRODUCT. IT IS NOT POSSIBLE OVER THE PHONE TO UNDERSTAND OR FORESEE ALL THE ISSUES THAT MIGHT ARISE IN YOUR INSTALLATION.

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



Need Additional Information?
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Jump to Our Technical Tips
Section on Our Web Site.



WARNING

DO NOT OPERATE ANY VEHICLE ON UNTESTED BRAKES!
SEE MINIMUM TEST PROCEDURE WITHIN

ALWAYS UTILIZE SAFETY RESTRAINT SYSTEMS AND ALL OTHER AVAILABLE SAFETY EQUIPMENT WHILE OPERATING THE VEHICLE

IMPORTANT • READ THE DISCLAIMER OF WARRANTY INCLUDED IN THE KIT

NOTE: 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:

- This kit may fit some 17" wheels, please refer to wheel clearance diagram (Figure 2, page 3) for your specific requirements. For ALL other wheels, consult the wheel clearance diagram (Figure 2, page 3) to determine compatibility. Parts that have been installed may not be returned or exchanged.
- Front brake kits do not include flex lines. OEM brake lines will not adapt to Wilwood calipers. Check the assembly instructions, or associated components section for brake line recommendations before assembly. In addition, Wilwood offers an extensive listing of brake lines and fittings on our web site: www.wilwood.com.
- 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 engagement can lead to component failure.

Photographic Tip

We suggest you take digital photos of the brake system setup before and during the disassembly procedure. This will aid in the event that something is not compatible with the new brake components and be a valuable tool to assist in the trouble-shooting process.

Exploded Assembly Diagram

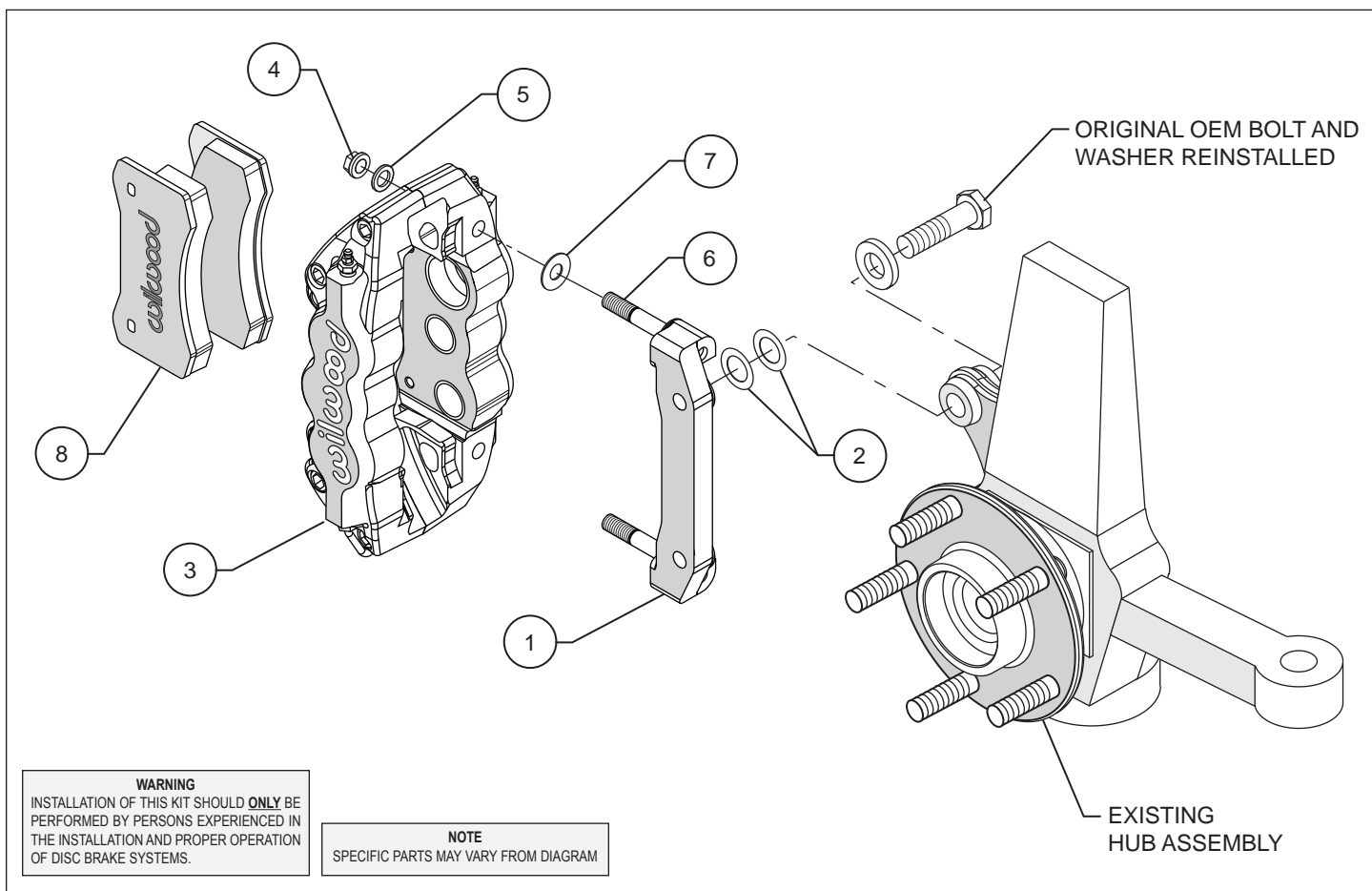


Figure 1. Typical Installation Configuration

Parts List

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	250-11721	Bracket, Caliper Mounting	2
2	240-8969	Shim, .029 Thick	12
3	120-11663/64-RS	Caliper, W6A (one each, right and left)	2
3A	120-11663/64-RSN	Caliper, W6A, Nickel	2
3B	120-11663/64-RSR	Caliper, W^A, Red	2
4	230-9182	Nut, 7/16-20, Self-Locking, 12 Point	4
5	240-11101	Washer, .453 I.D. x .750 O.D. x .063 Thick	4
6	230-9080	Stud, 7/16-14 x 7/16-20 x 3.375 long (pre installed in bracket)	4
7	240-3902	Shim, .016 Thick	16
8	150-9489K	Pad, BP-20 Compound, Axle Set	1

NOTES: Part Number 250-11720 Caliper Mounting Bracket Kit, includes part numbers 250-11721, 230-9080, 230-9182, 240-3902, 240-11101, 240-8969 and 300-10827 (not used)

Wilwood offers an optional Braided Stainless Steel Hose Kit. Order part number 220-8176 (C-5) or 220-9100 (C-6) (not included in kit)

Item 3A is an optional item available in the "-N" nickel caliper kit. Add "-N" to end of part number when ordering.

Item 3B is an optional item available in the "-R" red caliper kit. Add "-R" to end of part number when ordering.

General Information, Disassembly and Assembly Instructions

• Installation of this kit should **ONLY** be performed by individuals experienced in the installation and proper operation of disc brake systems. Prior to any attempt to install this kit, please check the following to ensure a trouble free installation.

• Inspect the contents of this kit against the parts list to ensure that all components and hardware are included.

• Make sure this is the correct kit to fit the exact make and model year of your axle and wheels. This kit is designed for direct bolt-on installation to mount a W6A caliper, onto a 1997-2012 C5/C6 Corvette spindle, over a 2005-up Z51 factory replacement rotor. The 2005-up Z51 rotor is 13.4" (340mm) in diameter and 1.25" thick, and available from nearly all auto parts stores and Corvette performance parts warehouses. This kit requires a minimum of 17" diameter wheels. **NOTE: This kit does not fit all Corvette wheels.** Wheel clearance must be verified using Figure 2.

• Verify your wheel clearance using Figure 2.

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 front wheels and stock calipers. Save the stock caliper mounting bracket bolts and washers, they will be utilized during reassembly.

• Remove any nicks or burrs on the upright that may interfere with the installation of the new brake components.

• Clean and de-grease the caliper mounting bosses and saved components.

Assembly Instructions (numbers in parenthesis refer to the parts list and Figure 1 on the preceding page):

• Install three lug nuts (finger tight) to keep the OE rotor in place while continuing with the installation.

• The caliper mount bracket (1) should initially be installed with clean, dry threads on the mounting bolts. Orient the bracket as shown in Figure 1, and install using saved OE bolts and washers. Initially place two .029" thick shims (2) on each bolt between the bracket and upright, Figure 1. Temporarily tighten the mounting bolts. **NOTE: The bracket must fit squarely against the mount bosses on the upright.** Inspect for interference from casting irregularities, machining ridges, burrs, etc. Later, after the caliper alignment has been checked, the mount bolts will be secured using red *Loctite*® 271.

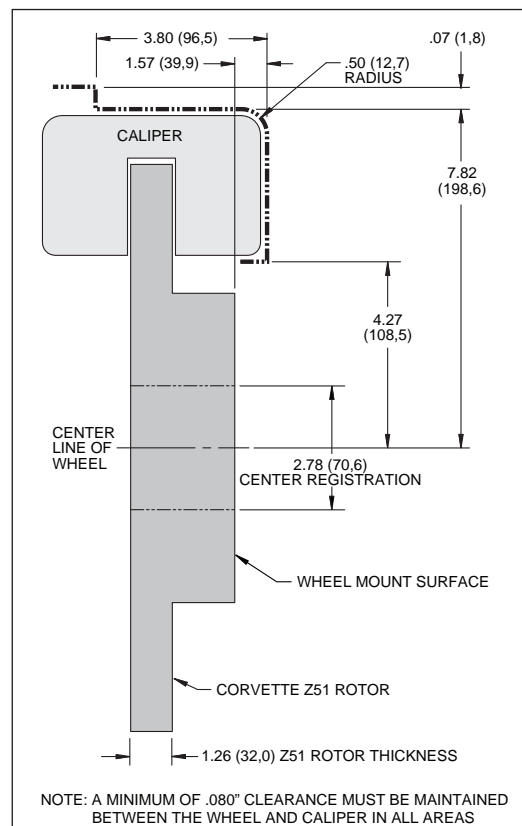


Figure 2. Wheel Clearance Diagram

Assembly Instructions

- **NOTE:** This kit contains distinct right and left hand calipers that must be mounted in a specific direction, as described below. Lubricate the caliper mounting studs (6) with lightweight oil. Initially place one .016" thick shim (7) on each stud as shown in Figure 1 and Photo 1. With the bleed screws pointing up, mount the caliper (3) onto the bracket (1) using lock nuts (4) and washers (5), Figure 1. Ensure that the caliper is mounted so that the largest pistons are at the rotor exit end of the caliper, in relation to the direction of rotor rotation. Temporarily tighten the lock nuts and view the rotor through the top opening of the caliper. The rotor should be centered in the caliper, Photo 2. If not, adjust by adding or subtracting shims (2) between the bracket and the upright. Always use the same amount of shims on each of the two mounting bolts. Once the caliper alignment is correct, remove the bracket mounting bolts one at a time, apply red *Loctite*® 271 to the threads, and torque to 65 ft-lb.

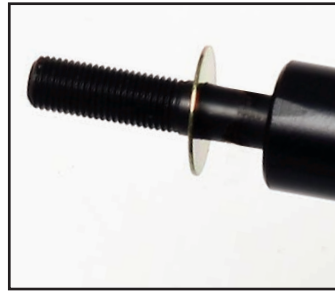


Photo 1

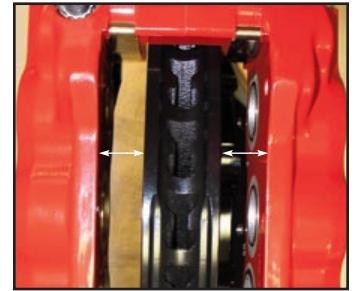


Photo 2

- Remove the two pad retaining pins from the caliper (3) by carefully popping out the pin retaining clips and sliding out the pins. Insert the brake pads (8) into the caliper, with the friction material facing the rotor, as shown in Photo 3. Check that the top of the brake pad is flush with the outside diameter of the rotor, Photo 4. If not, adjust by adding or subtracting shims (7) between the caliper and the bracket. After the caliper pad height is set, secure the brake pads in place with the pad retaining pins and clips. Torque the caliper lock nuts (4) to 47 ft-lb.

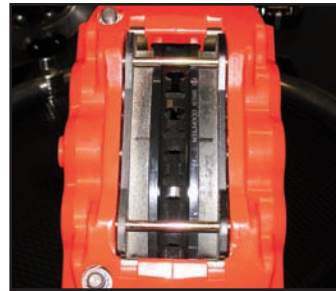


Photo 3



Photo 4

- Remove the lug nuts that were holding the rotor in place. Temporarily install the wheel and torque the lug nuts to the manufacturer's specification. Ensure that the wheel rotates freely without any interference.

Installing the New Flexlines

- **NOTE:** OEM rubber brake hoses generally cannot be adapted to Wilwood calipers. The caliper inlet fitting is a 1/8-27 NPT. The preferred method is to use steel adapter fittings at the caliper, either straight, 45 or 90 degree and enough steel braided line to allow for full suspension travel and turning radius, lock to lock. Wilwood offers a brake flex line hose kit to fit this application, order part number 220-8176 for all 1997-2004 (C-5), or part number 220-9100 for all 2005-present (C-6). Hose kits include hoses, fittings, etc., all in one package for this application. **Carefully route hoses to prevent contact with moving suspension, brake or wheel components.** **NOTE:** Wilwood 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.

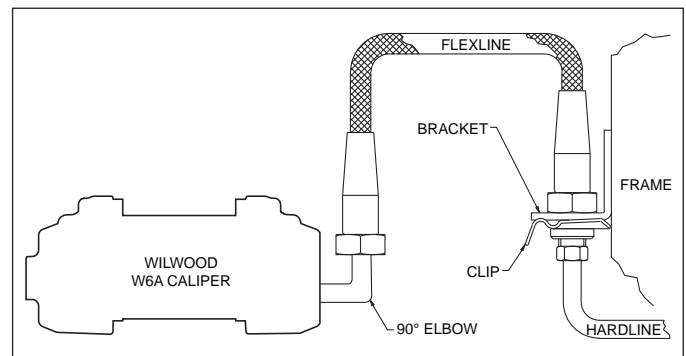


Figure 4. Brake Line Diagram

- **NOTE:** Specified brake hose kits may not work with all Years, Makes and Models of vehicle that this brake kit is applicable to, due to possible OEM manufacturing changes during a production vehicle's life. It is the installer's responsibility to ensure that all fittings and hoses are the correct size and length, to ensure proper sealing and that they will not be subject to crimping, strain and abrasion from vibration or interference with suspension components, brake rotor or wheel.

- In absence of specific instructions for brake line routing, the installer must use his best professional judgment on correct routing and retention of lines to ensure safe operation. Test vehicle brake system per the 'minimum test' procedure stated within this document before driving. After road testing, inspect for leaks and interference. Initially after install and testing, perform frequent checks of the vehicle brake system and lines before driving, to confirm that there is no undue wear or interference not apparent from the initial test. Afterwards, perform periodic inspections for function, leaks and wear in a interval relative to the usage of vehicle.

Assembly Instructions (Continued)

- Bleed the brake system, referring to the additional information and recommendations below for proper bleeding instructions. Check system for leaks after bleeding.
- Install the wheel and torque the lug nuts to manufacturer's specifications.

Additional Information and Recommendations

- Fill and bleed the new system with Wilwood Hi-Temp[®] 570 grade fluid or higher. 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 for racing or performance driving.*
- 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.
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 fluid 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, a master cylinder with increased capacity (larger bore diameter) may be required. Wilwood offers various lightweight master cylinders with large fluid displacement capacities.
- 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.*
- If after following the instructions, you still have difficulty in assembling or bleeding your Wilwood disc brakes, consult your local chassis builder, or retailer where the kit was purchased for further assistance.

Brake Testing and Pad Bedding

WARNING • DO NOT DRIVE ON UNTESTED BRAKES BRAKES MUST BE TESTED AFTER INSTALLATION OR MAINTENANCE MINIMUM TEST PROCEDURE

- Make sure pedal is firm: Hold firm pressure on pedal for several minutes, it should remain in position without sinking. If pedal sinks toward floor, check system for fluid leaks. DO NOT drive vehicle if pedal does not stay firm or can be pushed to the floor with normal pressure.
- At very low speed (2-5 mph) apply brakes hard several times while turning steering from full left to full right, repeat several times. Remove the wheels and check that components are not touching, rubbing, or leaking.
- Carefully examine all brake components, brake lines, and fittings for leaks and interference.
- Make sure there is no interference with wheels or suspension components.
- Drive vehicle at low speed (15-20 mph) making moderate and hard stops. Brakes should feel normal and positive. Again check for leaks and interference.
- Always test vehicle in a safe place where there is no danger to (or from) other people or vehicles.
- Always wear seat belts and make use of all safety equipment.

PAD BEDDING STEPS:

Once the brake system has been tested and determined safe to operate the vehicle, follow these steps for bedding of all pad materials and rotors. This procedure should be performed on a race track or other safe location where you can safely and legally obtain speeds up to 65 MPH while also being able to rapidly decelerate.

- Proceed with a series of 8-10 hard stops from 55-65 MPH down to 25 MPH allowing 20-30 seconds of cool down time between each stop.
- Drive at a moderate cruising speed, with the least amount of brake contact possible, until most of the heat has dissipated from the brakes. Avoid sitting stopped with the brake pedal depressed to hold the car in place during this time. Park the vehicle and allow the brakes to cool to ambient air temperature.

Associated Components

<u>PART NO.</u>	<u>DESCRIPTION</u>
290-6209	Wilwood Racing Brake Fluid (EXP 600 Plus) (16.9 oz)
220-8176	Flexline Kit, 1997-2004 Chevrolet Corvette, C-5
220-9100	Flexline Kit, 2005 - Present Chevrolet Corvette, C-6 / Z06
15A-9977K	Axle Pad Set, PolyMatrix A, 6617A
15B-9978K	Axle Pad Set, PolyMatrix B, 6617B
150-9980K	Axle Pad Set, BP-30 Smart Pad, 6617-30
130-5972	Caliper O-Ring Kit
180-9874	Pad Retainer Pin Set
220-6069	Caliper Bleed Screw Set
300-5876	Caliper Bridge SRS Wear Plate