

ASSEMBLY INSTRUCTIONS
FOR
WILWOOD FRONT D154 CALIPER (2.50" PISTON) KIT

**1978 - 2002 GM VEHICLES USING D154 CALIPER AND BRAKE
PADS WITH 1.04" THICK ROTORS**

PART NUMBER GROUP

140-12097

**DISC BRAKES SHOULD ONLY BE INSTALLED BY SOMEONE
KNOWLEDGEABLE AND COMPETENT IN THE FUNCTIONING
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.



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:

- OEM brake lines (using 10 mm banjo bolt fittings) will adapt to the Wilwood D154 calipers. Other fitting size OEM brake lines will require line replacement. 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.

Exploded Assembly Diagram

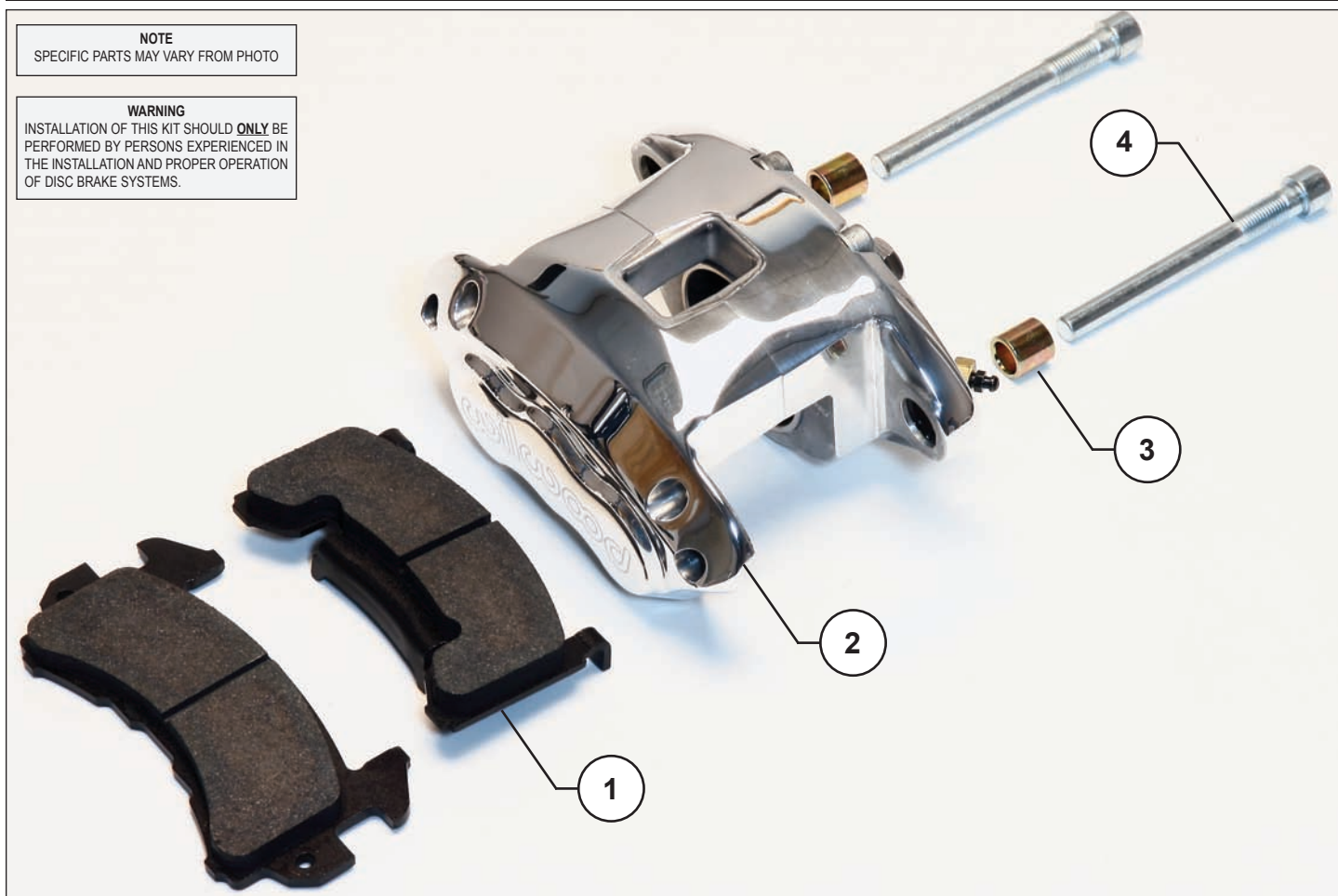


Photo 1. Typical Assembly Configuration

Parts List

| ITEM NO. | PART NO. | DESCRIPTION | QTY |
|----------|--------------|-------------------------------|-----|
| 1 | 150-8936K | Pad, BP-10 Compound, Axle Set | 1 |
| 2 | 120-11870-BK | Caliper, D154, Black | 2 |
| 2A | 120-11870-R | Caliper, D154, Red | 2 |
| 2B | 120-11870-P | Caliper, D154, Polished | 2 |
| 3 | 300-5968 | Sleeve | 4 |
| 4 | 230-10933 | Slide Pin Bolt | 4 |

NOTES: Item 2A is an optional item and is included in the -R red kit. Add -R to end of part number when ordering.
Item 2B is an optional item and is included in the -P polished kit. Add -P 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. Before assembling the Wilwood kit, double check the following to ensure a trouble-free installation.
- Make sure this is the correct kit to fit the exact make and model year of the vehicle's spindle. This kit is designed for direct bolt-on installation to 1978 through 2002 model year General Motors vehicles, using D154 style calipers with a 1.04" rotor width only.
- Inspect the contents of this kit 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 front wheels, factory calipers, and brake hoses (if installing replacements). **NOTE:** It is recommended that the brake hoses be replaced for all applications with braided steel hoses, refer to the assembly instructions below.
- Clean and de-grease the caliper mounting area of the spindle.
- **NOTE:** It is recommended that the rotors be replaced or lathe turned by a qualified machine shop, prior to installing the Wilwood kit.

Assembly Instructions (numbers in parenthesis refer to the parts list/photo on the preceding page): **CAUTION:** All mounting bolts must fully engage threaded holes.

- Install the disc brake pads (1) into the caliper (2) with the friction material facing the rotor, as shown in Photo 2.
- Install sleeves (3) onto slide pin bolts (4). Apply white lithium grease (available from your local auto parts store) to the slide pins/sleeves, as shown in Photo 3. **Do not apply to threads.** Mount the caliper onto the OEM mounting bracket using slide pin bolts, as shown in Photo 4. Torque to 35 ft-lbs.
- Check wheel clearance: Gently slide the caliper inboard, so as to remove any excess gap between the outboard brake pad, the rotor face and the caliper. This will approximate the location of the caliper in service. Temporarily install the wheel and torque lug nuts to manufacturer's specification. Ensure that the wheel rotates freely without any interference.
- Once the wheel clearance has been confirmed, remove wheel and connect brake hose as outlined below.

• **NOTE:** The caliper in this brake kit utilizes a 10mm x 1.50 thread inlet. OEM rubber brake hoses with 10mm fittings can be adapted to Wilwood D154 calipers. The preferred method is to use steel banjo adapter fittings at the caliper, and enough steel braided line to allow for full suspension travel and turning radius, lock to lock. **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. Wilwood offers universal brake flex line hose kits, for 3/8-24 IF chassis fittings order P/N 220-12104 for the 14 inch length, P/N 220-12105 for the 18 inch length, or P/N 220-12106 for the 22 inch length. For 10mm x 1 BF chassis fittings order P/N 220-12107 for 18 inch length. Hose kits include hoses, fittings, banjo bolts, etc. all in one package for use with this caliper.

• **NOTE:** Specified brake hose kits may not work with all Years, Makes and Models of vehicle that this caliper 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.

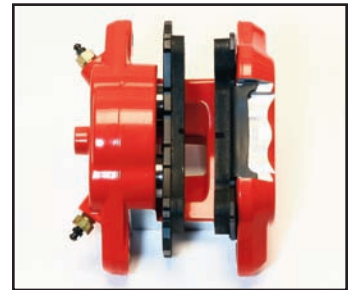


Photo 2



Photo 3



Photo 4

Assembly Instructions (Continued)

- If using a Wilwood flexline hose kit, proceed as follows: Do not lubricate bolt. With two new crush washers installed, torque bolt to 96 - 120 in-lbs. (**do not exceed 144 in-lbs**). Torque to lighter specification and check for leakage, increasing torque only to stop leakage without exceeding maximum specification. Replace crush washers and banjo bolt whenever re-assembly is required.
- If reusing the OEM brake hoses, install new crush washers (not included) and torque banjo bolt to manufacturer's specification.
- 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.
- 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 lugs nuts to manufacturer's specifications.

Additional Information and Recommendations

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

This General Motors front 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[®] 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 for racing or performance driving.**
- To properly bleed the brake system, begin with the caliper farthest from the master cylinder. Repeat the procedure until all calipers in the system are bled, ending with the caliper closest to the master cylinder. 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).
- 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 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

| <u>PART NO.</u> | <u>DESCRIPTION</u> |
|------------------------|---|
| 220-12104 | Flexline Hose Kit, D154 Caliper, 14 Inch, 3/8-24 IF to 10mm Banjo |
| 220-12105 | Flexline Hose Kit, D154 Caliper, 18 Inch, 3/8-24 IF to 10mm Banjo |
| 220-12106 | Flexline Hose Kit, D154 Caliper, 22 Inch, 3/8-24 IF to 10mm Banjo |
| 220-12107 | Flexline Hose Kit, D154 Caliper, 18 Inch, M10 BF to 10mm Banjo |
| 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) |
| 260-8555 | Wilwood 1 inch Aluminum Tandem Chamber Master Cylinder |
| 260-8555-P | Wilwood 1 inch Aluminum Tandem Chamber Master Cylinder-Polished |
| 260-8555-BK | Wilwood 1 inch Aluminum Tandem Chamber Master Cylinder-Black |
| 260-8556 | Wilwood 1-1/8 inch Aluminum Tandem Chamber Master Cylinder |
| 260-8556-P | Wilwood 1-1/8 inch Aluminum Tandem Chamber Master Cylinder-Polished |
| 260-8556-BK | Wilwood 1-1/8 inch Aluminum Tandem Chamber Master Cylinder-Black |