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ASSEMBLY INSTRUCTIONS

FOR

MC4 REAR PARKING BRAKE RETROFIT KIT FOR EXISTING DYNALITE/12.19" ROTOR DIAMETER PRO-STREET KITS*

*For additional vehicle compatibility, visit www.wilwood.com

BASE PART NUMBER

140-14415

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.



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DISC BRAKES

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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:

- Review the Wheel Clearance Diagram (Figure 2, page 3) to verify that there is adequate clearance with the wheels you will be using with the installation.
- This brake kit is 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 engagement can lead to component failure.

Photographic Tip

Important and highly recommended: Take photos of brake system before disassembly and during the disassembly process. In the event, trouble-shooting photos can be life savers. Many vehicles have undocumented variations, photos will make it much simpler for Wilwood to assist you if you have a problem.

Exploded Assembly Diagram

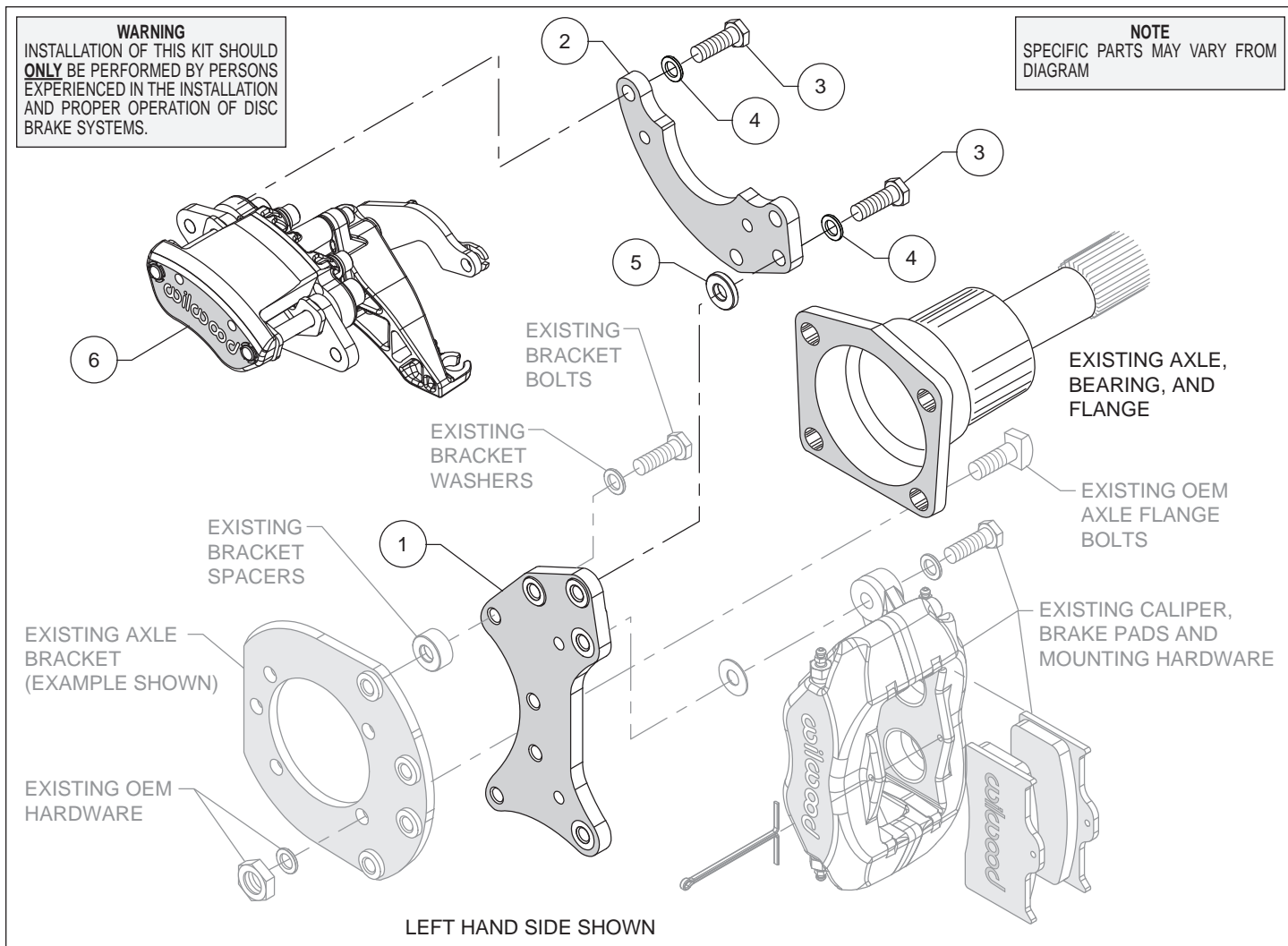


Figure 1. Typical Installation Configuration

Parts List

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	249-14220/21	Bracket, Caliper Mounting (pair, one each, left and right)	2
2	250-14011	Bracket, Flat, MC4 Caliper Mounting	2
3	230-10024	Bolt, 3/8-24 x 1.00 Long, Hex Head	8
4	240-10190	Washer, .391 I.D. x .625 O.D. x .063 Thick	8
5	300-11652	Spacer, .165 Long	4
6	120-12069/70-BK	Caliper, MC4 Parking Brake, Black	2
6A	120-12069/70-RD	Caliper, MC4 Parking Brake, Red	2

NOTES:

Part Number 230-14226 Bracket Mounting Bolt Kit, includes part numbers 230-10024, 240-10190 and 300-11652
 Items 6A is an optional item and included with the "-R" red caliper kits. Add "-R" to end of part number when ordering.

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 assembling this Wilwood disc brake kit, double 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 your current Wilwood rear Pro-Street kit with Dynalite caliper and 12.19" diameter rotor.
- Verify your wheel clearance using Figure 2.

Disassembly

- Disassemble the current rear brakes:
 - Raise the rear wheels off the ground and support the rear suspension according to the vehicle manufacturer's instructions.
 - Remove the rear wheels and disassemble the Wilwood brake kit assembly down to the bare axle. No need to disconnect the brake hoses from the caliper. Save all components and mounting hardware.
- Clean and de-grease the axle, axle housing flange and saved components.

Assembly Instructions (numbers in parenthesis refer to the parts list, and Figure 1 on the preceding pages): **CAUTION:** All mounting bolts must fully engage clinch nuts. Be sure to check that all bolts are either flush or protruding through flanged side of clinch nut after shimming, Figure 3.

- Separate the existing two-piece bracket by removing the four bolts. Make a note of the location of all spacers, washers, and shims (if any). Discard the old caliper mounting bracket.
- Orient the new caliper mount bracket (1) and the existing axle flange bracket as shown in Figure 1 and Photo 1, and assemble using saved bolts, washers, spacers, and shims (if any). **NOTE:** The spacing between the two brackets must be the same as it was for the old bracket assembly. Apply red *Loctite*® 271 to the bolt threads and torque to 40 ft-lbs.
- Attach the MC4 flat caliper bracket (2) to the caliper mount bracket (1) using bolts (3), washers (4), and spacers (5) as shown in Figure 1 and Photo 1. Apply red *Loctite*® 271 to the bolt threads and torque to 40 ft-lbs.

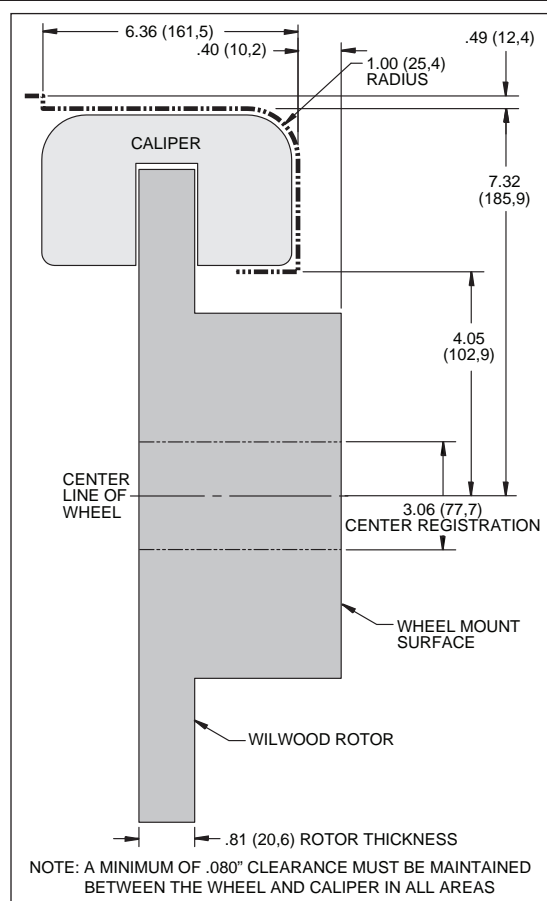


Figure 2. Wheel Clearance Diagram

Assembly Instructions (Continued)

- Orient the bracket assembly as shown in Figure 1, and re-mount it to the axle housing flange using the saved OEM bolts/nuts, Figure 1. Apply red *Loctite*® 271 to the bolt threads and torque to manufacturer's specification.

- Reinstall the remainder of the removed components in the reverse order of disassembly. Please reference your original kit instructions for the proper procedure, alignments, and torque specifications. If the brake pads were removed during disassembly, be sure to use a new cotter pin after installation.

- Mount the parking brake caliper (6) onto the MC4 caliper mounting flat bracket (2) using bolts (3) and washers (4), as shown in Figure 1 and Photo 2. Apply red *Loctite*® 271 to bolt threads, and torque to 40 ft-lb.

- Temporarily install the wheel and torque the lug nuts to the manufacturer's specification. Ensure that the wheel rotates freely without any interference.

- Examine the brake hoses to be sure they don't interfere with the new components. Reroute and secure as needed. **NOTE:** *It is the installer's responsibility to properly route and ensure adequate clearance and retention for brake hose components.*

- 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 (if brake hoses were disconnected), referring to the additional information and recommendations on page 5 for proper bleeding instructions. Check system for leaks after bleeding.

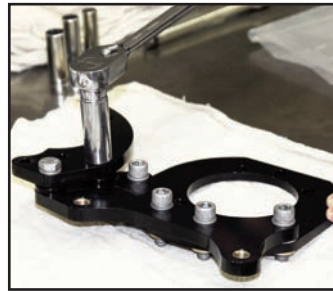


Photo 1
(Left Side Bracket Shown)

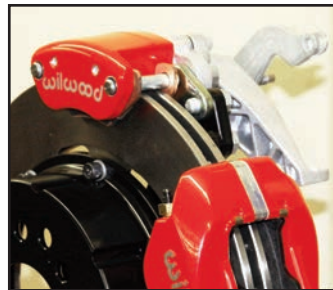


Photo 2
(left side shown)

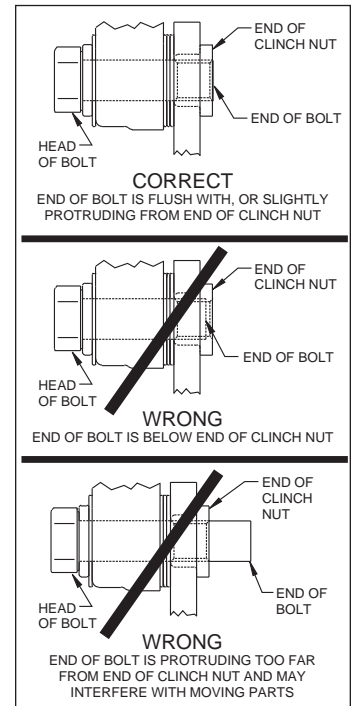


Figure 3. Clinch Nut Engagement Diagram

IMPORTANT:

- To ensure maximum performance from your parking brake system, the cables must be routed as straight as possible. Bends in the cable can significantly reduce efficiency and thus reduce pull force at the brake. Tight bends must be avoided with a minimum recommended bend radius of 6" to 8".
- Cables should be properly restrained to prevent "straightening" of bends when tension is applied. Restrain movement of cable by affixing the cable sheath to body or chassis by fitting cable clamps at various points over the length of cable or by using original equipment cable attachments points. The clamping method chosen will require that cable sheath be held tightly without movement, crushing or causing interference to the internal cable.
- Cables must be initially pre-stretched by multiple applications of the brake handle, then re-adjusted to correct tension.

- Install new Wilwood universal parking brake cable kit, P/N 330-9371 (sold separately), and follow the instructions supplied with the kit.

Assembly Instructions (Continued)

- Adjust parking brake:
 1. With the parking brake off, loosen adjustment bolt jam nut (on the parking brake caliper).
 2. Tighten the adjustment bolt until there is some drag on the rotor.
 3. Repeat steps 1 and 2 for other rear wheel caliper.
 4. Back off adjustment bolt one-half turn on each caliper.
 5. Ensure there is no rotation of adjustment bolt and tighten jam nut 80-120 **in-lb.** on each caliper.
 6. Check for drag on each rotor. A slight rubbing sound during rotation is acceptable.
- Install the wheel and torque the lug nuts to the manufacturer's specification.
- After bleeding (if brake hoses were disconnected) the brakes per these installation instructions, carefully test the holding power of the parking brakes. Test parking brake in a safe area, first on a flat surface by pushing on the vehicle, then on a slight incline by applying and releasing handle multiple times. Refer to instructions on the last page.

Additional Information and Recommendations

- 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. Additional information is also available on our web site at www.wilwood.com, or e-mail: info@wilwood.com.

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

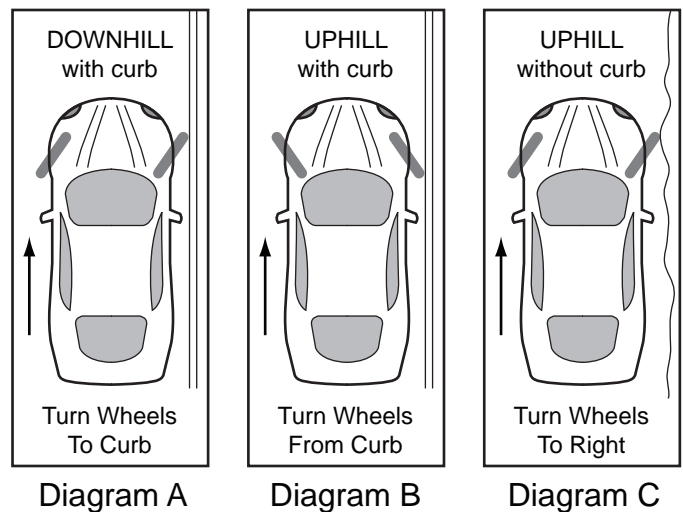
- Make sure pedal is firm: Hold firm pressure on pedal for several minutes, it should remain in position without sinking. If pedal sinks toward floor, check system for fluid leaks. DO NOT drive vehicle if pedal does not stay firm or can be pushed to the floor with normal pressure.
- At very low speed (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.

Parking Brake

WARNING • PARKING BRAKE

- Parking brake must be properly adjusted before use and must be manually readjusted for wear if parking brake handle or foot lever travel becomes excessive.
- The holding ability of the brake should be tested by stopping on a sloping surface and applying the parking brake while holding car with the hydraulic foot brake. This should be accomplished both facing up and down hill.
- Do not rely exclusively on the parking brake to hold the car; Curb wheels as recommended by the applicable diagram and put gear selector in park, or shift into first gear or reverse with a manual transmission.

- Diagram A - When parking facing downhill, turn front wheels towards the curb or right shoulder. This will keep from rolling into traffic if the brakes become disengaged.
- Diagram B - Turn the steering wheel to the left so the wheels are turned towards the road if you are facing uphill with a curb. The tires will catch the curb if the car rolls backward.
- Diagram C - When facing uphill without a curb, turn the wheels sharply to the right. If the vehicle rolls, it will go off the road rather than into traffic.
- When parking on a hill, always set the parking brake and move the gear selector into park, or shift into first or reverse gear if your vehicle has a manual transmission.



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Associated Components

<u>PART NO.</u>	<u>DESCRIPTION</u>
260-8555	Wilwood 1.00" Bore Aluminum Tandem Master Cylinder
260-8556	Wilwood 1.12" Bore Aluminum Tandem Master Cylinder
260-13706	Wilwood Residual Pressure Valve (2 lb for disc brakes)
260-13707	Wilwood Residual Pressure Valve (10 lb for drum brakes)
260-8419	Wilwood Proportioning Valve, Knob Style
260-8420	Wilwood Proportioning Valve, Lever Style
260-11179	Wilwood Combination Proportioning Valve with Brake Light Switch
290-0632	Wilwood Racing Brake Fluid (Hi-Temp° 570) (12 oz)
290-6209	Wilwood Racing Brake Fluid (EXP 600 Plus) (16.9 oz)
150-9413K	BP-20 Street Performance / Racing Brake Pads • Baseline Pad for Track Oriented Street Cars
150-12243K	BP-40 High Temperature Racing Brake Pads • Race Only Pad for Severe Duty Oval, Road Course, or Off-Road
220-7056	Stainless Steel Braided Flexline Kit, Universal, 14 Inch, Domestic, 3/8-24 IF
220-7699	Stainless Steel Braided Flexline Kit, Universal, 16 Inch, Domestic, 3/8-24 IF
220-8307	Stainless Steel Braided Flexline Kit, Universal, 18 Inch, Domestic, 3/8-24 IF
220-8338	Stainless Steel Braided Flexline Kit, Universal, 14 Inch, Metric 10mm x 1.0
220-6856	Stainless Steel Braided Flexline Kit, Universal, 18 Inch, Metric 10mm x 1.0