

ASSEMBLY INSTRUCTIONS

FOR

FRONT DISC BRAKE KIT HEAVY DUTY, VENTED ROTOR TYPE

1963 - 1964 IMPALA / CORVETTE

PART NUMBER

140-5329-B*

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.



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 ROTORS AVAILABLE; ADD "-D" TO END OF PART NUMBER WHEN ORDERING.

NOTE: Before installation, please note that the kit, when completely installed will result in the wheels being moved out approximately one inch per side more than the stock brakes.

Exploded Assembly Diagram and Parts List

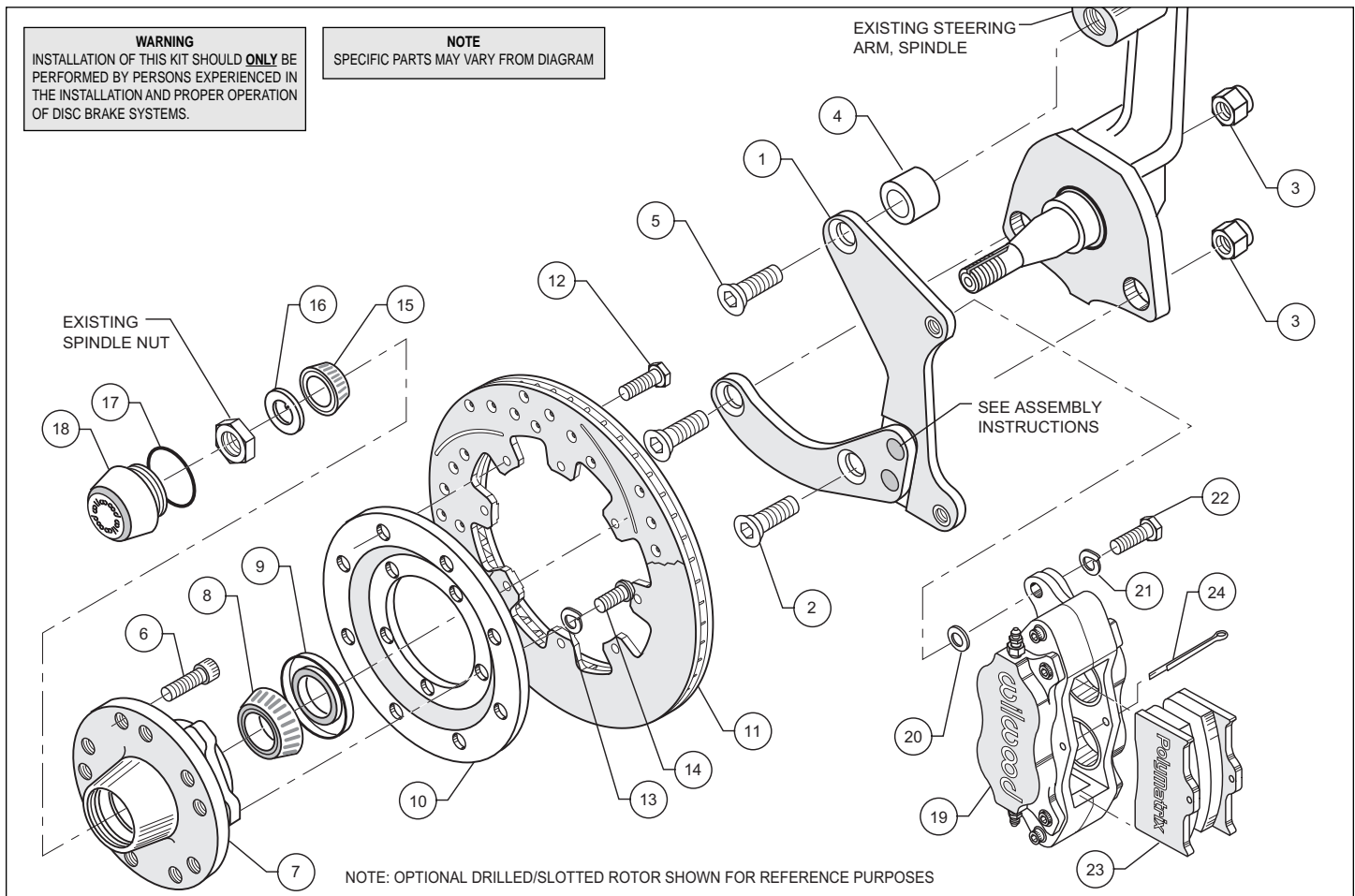


Figure 1. Typical Installation Configuration

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	249-3421/22	Brackets, Caliper Mounting (pair, one each, left and right)	1
2	230-3759	Bolt, 7/16-20 x 2.50 Long, Hex Head	4
3	230-3760	Nut, Oval Lock 7/16-20	4
4	300-5327	Spacer, 1.00 x 0.656 x 0.864 Long	2
5	230-5326	Bolt, 5/8-18 x 2.00 Long	2
6	230-0921	Stud, Wheel, 1/2-20 x 3.00 Long	10
7	270-7283	Hub Assembly	2
8	370-0879	Cone, Inner Bearing	2
9	380-0928	Seal, Grease	2
10	300-3099	Adapter, Rotor	2
11	160-0471	Rotor, 11.75 Diameter	2
11A	160-7101/02	Rotor, Drilled and Slotted (pair, one each, left and right)	2
12	230-2043	Bolt, 5/16-18 x 0.75 Long, Hex Head	16
13	240-2510	Washer, Flat, 3/8	10
14	230-3784	Bolt, 3/8-16 x 1.00 Long, Button Head, Torx	10
15	370-0877	Cone, Outer Bearing	2
16	240-2283	Washer, Spindle, 3/4	2
17	211-1674	O-ring	2
18	270-2158	Cap, Dust	2
19	120-4997	Caliper, Billet Dynalite	2
20	240-1159	Washer, Shim, 3/8	12
21	240-0140	Washer, Lock, 3/8	4
22	230-0228	Bolt, 3/8-24 x 1.25 Long, Hex Head	4
23	15T-5911	Pad, Soft, Polymatrix	4
24	180-0055S	Pin, Cotter	2

NOTES:

Part Number 230-5328 Bolt Kit, bracket bolt kit, includes part numbers 230-3759, 230-3760, 230-5326 and 230-5327

Part Number 230-3829 Bolt Kit, adapter plate to hub, includes part numbers 230-3784 and 240-2510

Part Number 230-3484 Bolt Kit, rotor to adapter plate, includes part number 230-2043

Part Number 230-0204 Bolt Kit, caliper to bracket, includes part numbers 230-0228, 240-0140 and 240-1159

*A Torx driver is required for Part Number 230-3784

Item 11A is an optional item and is available in the (D) drilled kits

General Information 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 the Wilwood front disc brake kit, 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 vehicles spindle (i.e., hubs for a 1955 Chevrolet spindle will not fit a 1963 spindle).
- Verify the hub stud pattern in this kit matches the stud pattern of the vehicles wheels.
- Inspect the package contents against the parts list to ensure that all components and hardware are included.

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

- Disassemble the original equipment front brakes:

Raise the front wheels off the ground. Support the front suspension by placing jack stands under the lower control arms. The lower control arms **MUST** be supported. The vehicle's weight must be on jack stands and not supported by a car jack or hoist.

Remove the center cap, cotter pin, nut lock and the wheel bearing nut and washer. Save the wheel bearing nut and nut lock. Remove the brake drum and hub assembly, including the wheel bearings. Disconnect the brake hoses from the brake line at the body. Remove the two upper backing plate retaining nuts and bolts. Remove the two lower ball joint to spindle nuts and bolts. The backing plate, spindle and ball joint will now separate. Remove the brake backing plate and shoes as an assembly. Reinstall the front ball joint bolt and nut. Do not tighten at this time. Do not reinstall the rear bolt and nut.

- Clean and de-grease the spindles. Remove all nicks or burrs on the spindle snout and threads. Remove any of the backing plate gasket which may remain on the spindles. Remove any scale or rust from the gasket area.

- The spindle bracket (1) and the caliper bracket (2) have been assembled at the factory for alignment purposes. Loosen the two bolts that secure the brackets together so that the bolts are hand tight only, this will enable the bracket assembly (1 and 2) to be adjusted to accommodate various spindle tolerances during assembly. Bolt the lower portion of the bracket assembly (1) to the backing plate face of the spindle using two bolts (3) and two lock nuts (4), hand tighten only. Install bolt (6) through caliper bracket (2), placing the spacer (5) between the bracket and the steering arm. Torque two bolts (3) to 47 ft-lb. Apply red *Loctite*® 271 to the bolt threads (6) and torque to 120 ft-lb. Remove one of the bolts that secure the bracket assembly (1 and 2) to each other. Apply red *Loctite*® 271 to the bolt threads and reinsert into the bracket assembly. Repeat this procedure for the second bolt. Torque these two bolts to 30 ft-lb. **NOTE:** Be sure the heads of the bracket assembly (1 and 2) insert nuts are facing outward toward the wheel.

- Install five new wheel studs (7) into the hub (8). Torque to 77 ft-lb. **NOTE:** There are two five lug patterns in the hub (5 x 4.50 and 5 x 4.75). Make sure of the correct hole pattern for the correct wheel application before installing studs into hub.

- Pack the large inner bearing cone (9) with high temperature disc brake bearing grease (available from your local auto parts store) and install into the backside of the hub (8).

- Install the grease seal (10) by pressing into the backside of the hub (8).

- Attach rotor adapter (11) to rotor (12) using eight bolts (13). Apply red *Loctite*® 271 to bolts (13) and torque to 180 in-lb. Safety wire bolts (13). **NOTE:** The flat side of the rotor (12) lugs faces toward the rotor adapter (11) with the dished side of the rotor adapter (11) facing away from the rotor (12).

- Mount the adapter/rotor assembly (11 and 12) to the hub (8) using five flat washers (14) and five bolts (15). Apply red *Loctite*® 271 to bolts (15) and torque to 22 ft-lb. Safety wire bolts (15).

- Pack the small outer bearing cone (16) with high temperature disc brake bearing grease. Lightly coat the spindle bearing surfaces with bearing grease. Slide the hub/rotor assembly (8 and 12) with outer bearing cone (16) onto the spindle. Secure using spindle washer (17), existing adjusting nut and nut locking device.

- Bearing adjustment:

Tighten the wheel bearing nut to 60 in-lb while turning the hub/rotor assembly (11 and 12). Position the nut lock on the wheel bearing nut with one pair of slots in-line with (covering) the cotter pin hole. Back off the adjusting nut lock assembly one slot and install a new cotter pin (not supplied). **The resulting adjustment should be zero (no pre-load) to 0.003 inch end play.**

- Install the dust cap (19) onto the hub (8). Friction created by the o-ring (18) on the dust cap (19) keeps it from unscrewing. The O.D. of the existing spindle washer may be larger than the I.D. of the dust cap (19) which may allow the washer to contact the dust cap (19). Use the spindle washer (17) supplied with the kit instead of the stock washer.

- With the bleed screws pointing up, mount the caliper (20) onto the caliper bracket (2) using two bolts (23), two lock washers (22) and two shim washers (21). Finger tighten. View the rotor (12) through the top of the caliper (20). The rotor (12) should be aligned in the center of the caliper (20). If not, loosen the two bolts (23) and adjust the caliper (20) by using 0.032 inch thick shim washers (21). The shim washers (21) should be placed between the caliper (20) and the caliper bracket (2). Finger tighten and recheck alignment. Loosen the two bolts (23) and apply red *Loctite*® 271 to bolt threads (23) and torque to 30 ft-lb. Safety wire the two bolts (23).

- Install the disc brake pads (24) and secure using cotter pin (25).

- NOTE:** The caliper inlet hole has a 1/8-27 NPT thread. A steel adapter fitting 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. **THE ORIGINAL EQUIPMENT PRODUCTION RUBBER BRAKE HOSES SHOULD NOT BE USED.**

Additional Information and Recommendations

- With the Wilwood disc brake system completely installed, use either of the two methods listed to balance the brake bias front to rear.
 - The Most Efficient Method:**
A Wilwood brake pedal/balance bar assembly (either floor or swing mount) and two single master cylinders (either two 7/8 inch or two 1 inch) mounted side by side. Dialing the balance bar left or right transfers the pressure from front to rear, or rear to front and allows the smallest of pressure adjustments to be made without any loss to the overall brake system line pressure.
 - The More Popular Method:**
An OEM 1-1/16 inch bore dual outlet master cylinder with a Wilwood adjustable proportioning valve plumbed into either the front or rear brake line. **NOTE:** A proportioning valve is an in-line pressure reducing device. Output pressure is reduced proportionally to input pressure. Net result is that the line pressure is reduced, forcing the remaining brakes to do more of the work.
- 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.
- 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.
- If the master cylinder is mounted lower than the disc brake calipers, some fluid flowback to the master cylinder reservoir may occur, creating a vacuum effect that retracts the caliper pistons into the housing. This will cause the pedal to go to the floor on the first stroke until it has "pumped up" and moved all the pistons out against the pad again. A Wilwood in-line two pound residual pressure valve, installed near the master cylinder will stop the fluid flowback and keep the pedal firm and responsive.
- 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) will 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.
- On some models of disc brake spindles there are "ears" where the OEM calipers were mounted and these "ears" interfere with the assembly of the Wilwood disc brake kit. If it becomes necessary to remove these "ears", remove as little as possible being careful not to cut away any of the mounting holes that may be required to bolt on the caliper mounting bracket.
- 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.

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)
260-2220	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
260-4893	1-1/16 inch Tandem Master Cylinder (aluminum housing)
250-2406	Mounting Bracket Kit (tandem master cylinder)
350-2038	1971 - 1973 Pinto Rack and Pinion (new, not rebuilt)
270-2016	Quick Release Steering Hub (3/4 inch shaft)
270-2017	Quick Release Steering Hub (5/8 inch shaft)
220-0149	Fitting, Straight (1/8-27 NPT to -4)
220-0842	Fitting, 90° Elbow (1/8-27 NPT to -4)
	(Consult the Wilwood Catalog for a complete parts list)

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.