

# ASSEMBLY INSTRUCTIONS

FOR

## FRONT SUPERLITE 6 BIG BRAKE KIT HEAVY DUTY, VENTED ROTOR TYPE

1967 - 1969 CAMARO, DISC/DRUM SPINDLE

1967 - 1974 NOVA, DISC/DRUM SPINDLE

1964 - 1966 CHEVY II, DRUM SPINDLE WITH MODIFICATIONS

1964 - 1966 CHEVELLE, DRUM SPINDLE WITH MODIFICATIONS

1967 - 1972 CHEVELLE, DISC/DRUM SPINDLE

PART NUMBER

**140-7019\***

### 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.

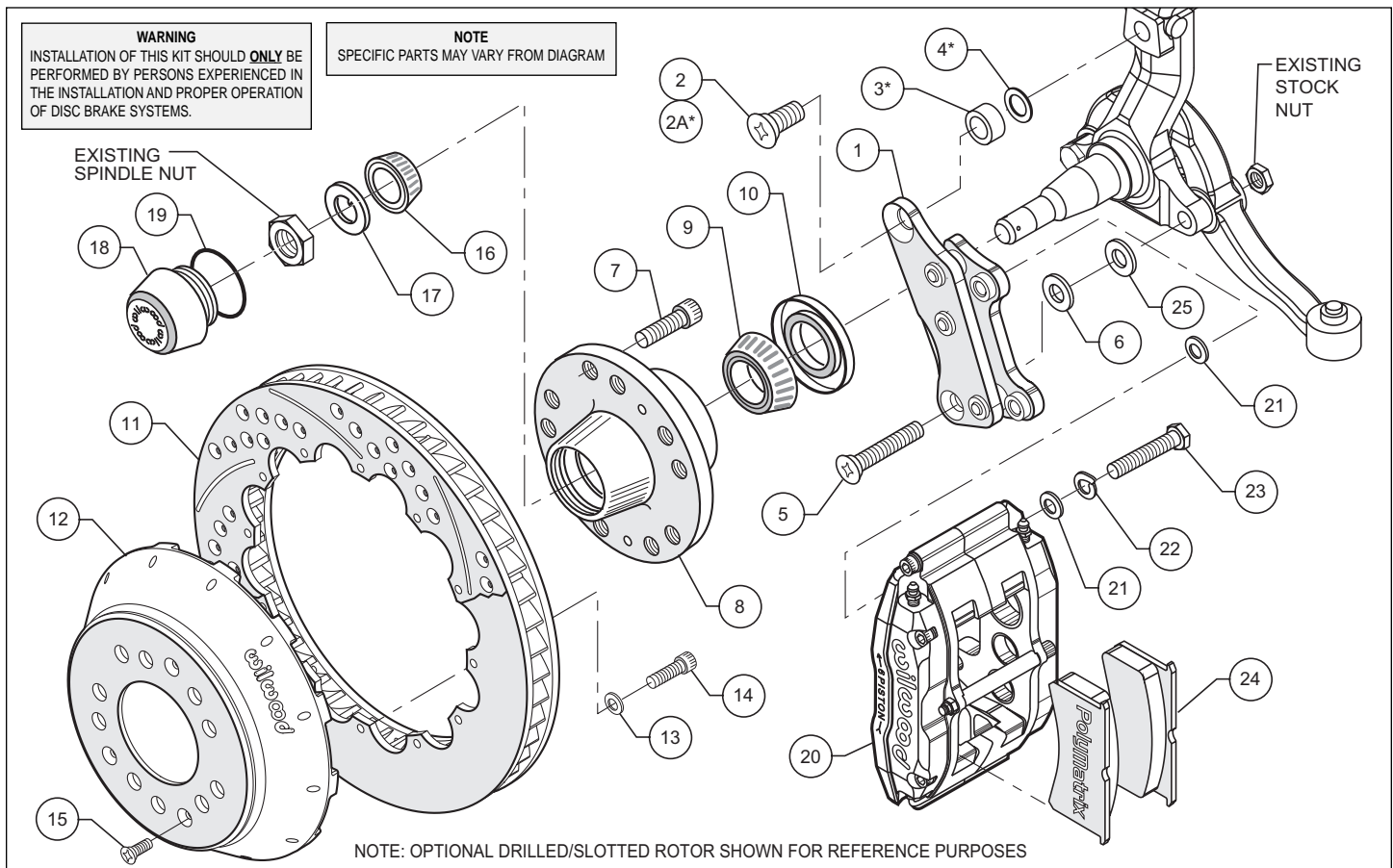
### IMPORTANT

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

# Exploded Assembly Diagram and Parts List



**Figure 1. Typical Installation Configuration**

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	249-7043/44	Brackets, Caliper Mounting (pair, one each, left and right)	2
2	230-0975	Bolt, 5/8 x 18 x 1.12 Long, FHCS	1
2A*	230-3412	Bolt, 5/8 x 18 x 1.62 Long, FHCS	2
3*	300-3415	Spacer	2
4*	240-7096	Washer, 1-1/16 inch	2
5	230-0974	Bolt, 1/2-20 x 3.0 Long, FHCS	2
6	240-0976	Washer, 1 inch	6
7	230-6959	Stud, 1/2-20 x 2.00 Long, SHCS	10
8	270-7037	Hub Assembly	2
9	370-0879	Cone, Inner Bearing	2
10	380-0927	Seal, Grease	2
11	160-6833/34	Rotor (one each, left and right hand)	2
11A	160-6835/36	Rotor (drilled and slotted, one each, left and right hand)	2
12	170-7038	Hat	2
13	240-2509	Washer, 1/2 inch	24
14	230-6737	Bolt, 1/4-20 x 1.00 Long, 12 PT CS	24
15	230-7029	Bolt, 1/4-20 x .50 Long	12
16	370-0877	Cone, Outer Bearing	2
17	240-2283	Washer, Spindle	2
18	270-2158	Cap, Dust	2
19	211-1674	O-ring	2
20	120-7228/29-RS	Caliper, Billet Superlite 6	2
21	240-1848	Shim washer, 0.030 inch thick	16
22	240-0139	Washer, Lock, 3/4 inch	4
23	230-6381	Bolt, 7/16-20 x 1.75 Long, Hex Head	4
24	15Q-6828	Pad, PolyMatrix "Q" Compound, Axle Set	4
25	240-1347	Shim Washer	2
Optional	220-7056	Braided Stainless Steel Hose Kit (not included)	

**NOTES:**

Part Number 230-0977 Bolt Kit, bracket to spindle, includes p/n's 230-0974, 230-0975, 230-3412, 240-0976, 240-7096 & 300-3415

Part Number 230-4572 Bolt Kit, rotor to hat, includes part numbers 230-6737 and 240-2509

Part Number 230-7031 Bolt Kit, caliper to bracket, includes part numbers 230-6381, 240-0139 and 240-1848

Part Number 230-7032 Bolt Kit, hat bolts, includes part number 230-7029

\*Items 2A, 3 and 4 are to be used with Disc Brake Spindles only

Item 11A is an optional item and is included in the (D) kits. Add "D" to end of part number when ordering

## Important Notice - Read This First

Before any tear-down or disassembly begins, review the wheel clearance diagram (Figure 2, below right) to verify that there is adequate clearance with the wheels you will be using with this installation.

## 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 1970 Camaro spindle will not fit a 1982 Camaro spindle). 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.
- 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.

### Disassembly Instructions

- 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.

**Disc Application:** Remove the wheel. Disconnect the caliper brake hose from the brake line at the frame. Remove the two bolts that hold the stock caliper to the stock bracket. Remove caliper, center cap, cotter pin, castle nut, washer and hub-rotor assembly. Save the castle nut. Remove the upper bracket bolt along with the two lower steering arm bolts and nuts. The bracket, dust shield and steering arm will now separate. Reinstall the steering arm along with the front bolt and nut. Do not tighten at this time. Do not reinstall the steering arm rear bolt and nut.

**Drum Application:** Remove the wheel center cap, cotter pin, castle nut, wheel bearing and washer. Save the castle nut. 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 bolts and nuts. Remove the two lower steering arm bolts and nuts. The backing plate, spindle and steering arm will now separate. Remove the backing plate and shoes as an assembly. Reinstall the steering arm along with the front bolt and nut. Do not tighten at this time. Do not reinstall the steering arm rear bolt and nut.

- Thoroughly clean the spindles.

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

- Disc Application:** Apply red *Loctite*® 271 to bolt threads (2A) before assembly of the caliper mounting bracket (1). Mount bracket (1) to face of dust plate mount pad of spindle using the bottom bolt (5) while positioning washer (6) and shim washer (25) “if needed for bracket flatness” between bracket and spindle face, finger tighten only. Install the upper bolt (2A) with spacer 3 and flat washer (4), ensuring flatness positioned between bracket and top hole of spindle face, torque to 120 ft-lb. Torque bolts (5) to 77 ft-lb. **NOTE:** Be sure the heads of the bracket (1) insert nuts are facing outward toward the wheel.

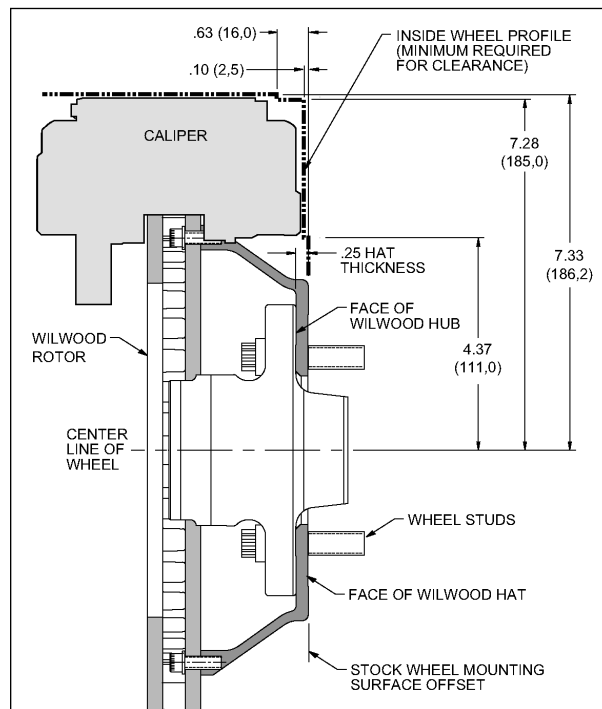


Figure 2. Wheel Clearance Diagram

## General Information and Assembly Instructions (Continued)

- Drum Application:** Apply red *Loctite*® 271 to bolt threads (2) before assembly of the caliper mounting bracket (1). Mount bracket (1) to face of dust plate mount pad of spindle using the bottom bolt (5) while positioning washer (6) between bracket and spindle face, finger tighten only. Install the upper bolt (2), torque to 120 ft-lb. Torque bolts (5) to 77 ft-lb. **NOTE:** Be sure the heads of the bracket (1) insert nuts are facing outward toward the wheel.
  - Install 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).
  - With the larger I.D. side of the rotor (11) facing away from the hat (12), bolt rotor (11) to hat (12) through the backside of the rotor using washers (13) and bolts (14). Torque bolts (14) to 85 **in-lb**. Safety wire bolts (14), see Figure 3.
  - Slide the rotor/hat assembly over the studs (7) in the hub (8) taking care to align the small countersunk holes in the hat (12) with the small threaded holes in the hub (8). Install three flat head socket screws (15) through the small holes in the hat (12) and torque to 85 **in-lb**.
  - Pack the small outer bearing cone (16) with high temperature disc brake bearing grease and install into front of hub (8). Slide the hub/rotor assembly (8 and 11) with outer bearing cone (16) onto the spindle. Secure using spindle washer (17), stock adjusting nut and nut locking device. Adjust bearings per Original Equipment Manufacturer (OEM) specifications.
  - Install the dust cap (18) and o-ring (19) onto the hub (8). Friction created by the o-ring (19) on the dust cap (18) keeps it from unscrewing.
  - With the bleed screws pointing up, mount the caliper (20) onto the caliper bracket (1) using flat washers (21), lock washers (22), bolts (23) and shim washer (21) positioned between caliper and bracket. Finger tighten. View the rotor (11) through the top opening of the caliper (20). The rotor (11) should be aligned in the center of the caliper (20). If not, adjust the caliper (20) by using 0.032 inch thick shims (21) placed between the caliper mounting bracket (1) and the caliper (20). Finger tighten and recheck alignment. Apply red *Loctite*® 271 to bolt threads (23) and torque to 47 ft-lb. Safety wire caliper bolts (23).
  - Remove the caliper bridge spacer and bolt, then install the disc brake pads (24), then reinstall the caliper bridge spacer and bolt.
- NOTE:** The caliper inlet hole has a 1/8-27 NPT thread. A steel adapter fitting, straight or 90° elbow, 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. Wilwood offers a hose kit, P/N 220-7056, which includes hoses, fittings, etc., all in one package. **THE ORIGINAL EQUIPMENT PRODUCTION RUBBER BRAKE HOSES SHOULD NOT BE USED.**

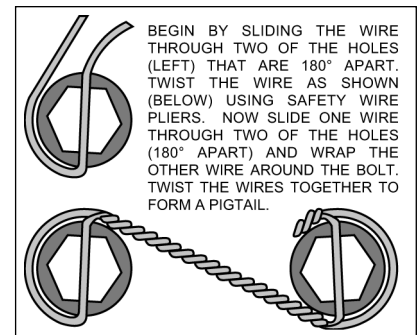


Figure 3. Safety Wire Diagram

## 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<sup>o</sup> 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 <sup>o</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
260-4893	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.