

ASSEMBLY INSTRUCTIONS

FOR

DYNALITE BIG BRAKE FRONT HUB KIT VENTED ROTOR TYPE

1971 - 1978 PINTO / MUSTANG II
(FIVE LUG CONFIGURATION ONLY)*

PART NUMBER
140-8652**

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.

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



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.

*KIT SUPPORTS BOLT PATTERNS 5 X 4.50 AND 5 X 4.75 ONLY

**DRILLED ROTORS AVAILABLE; ADD "-D" TO END OF PART NUMBER

**POLISHED CALIPERS AVAILABLE; ADD "-P" TO END OF PART NUMBER

Exploded Assembly Diagram and Parts List

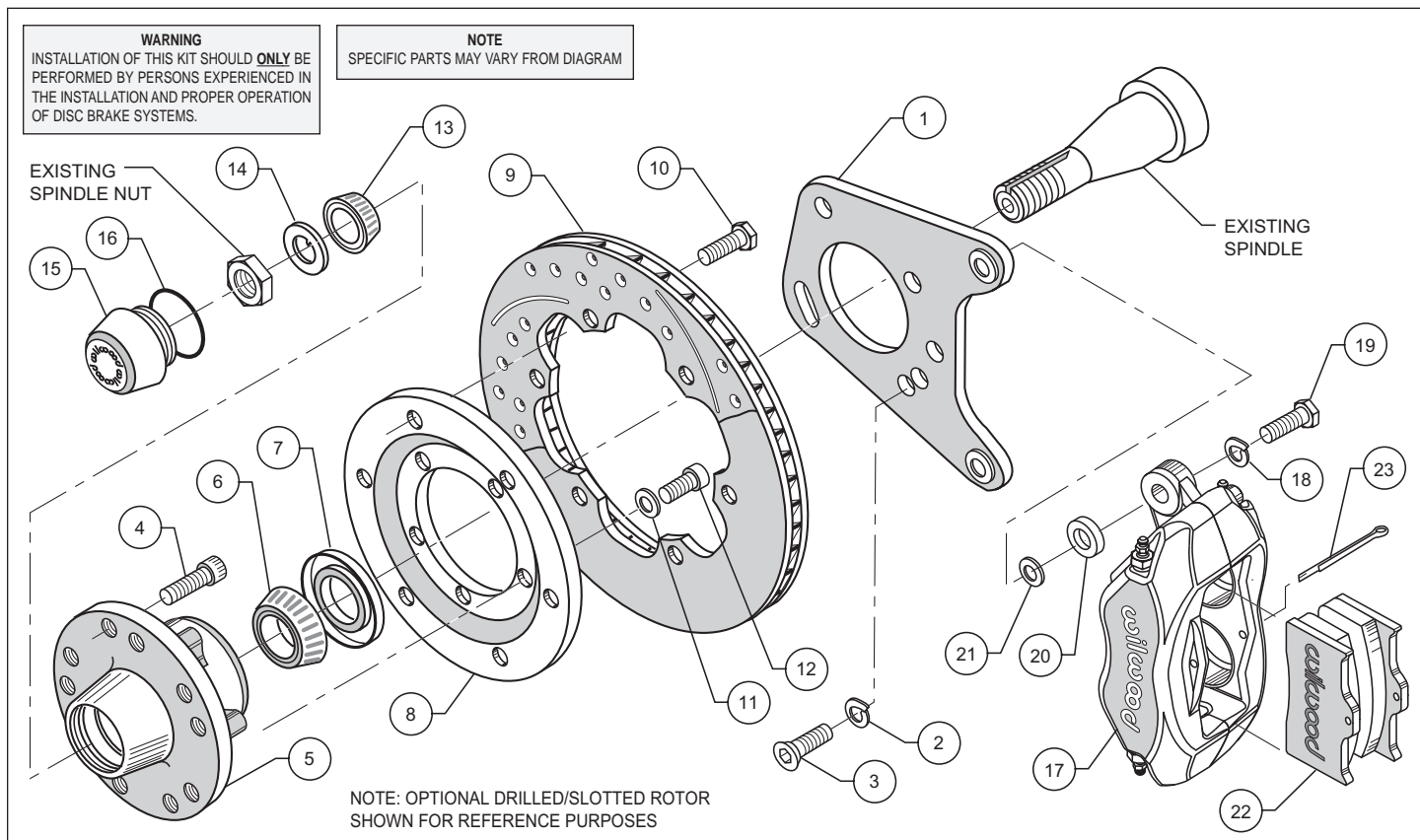


Figure 1. Typical Installation Configuration

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	249-8617/18	Brackets, Caliper Mounting (pair, one each, left and right)	2
2	240-0140	Washer, Lock 3/8 inch	6
3	230-1493	Bolt, 3/8-16 x 1.00 Long, SHCS	6
4	230-2187	Stud, 1/2-20 x 1.75 Long, SHCS	10
5	270-7276	Hub Assembly	2
6	370-0884	Cone, Inner Bearing	2
7	380-0885	Seal, Grease	2
8	300-3307	Adapter, Rotor	2
9	160-5840	Rotor, .81" Thick x 11.00" Dia, 6 x 6.25" Bolt Circle	2
9A	160-7099/00	Rotor, Drilled and Slotted (pair, one each, left and right hand)	2
10	230-2043	Bolt, 5/16-18 x 0.75 Long, Hex Head	12
11	240-2510	Washer, 3/8 inch	10
12	230-3784*	Bolt, 3/8-16 x 1.0 Long, Torx Head	10
13	370-0882	Cone, Outer Bearing	2
14	240-2444	Washer, Spindle	2
15	270-2158	Cap, Dust	2
16	211-1674	O-ring	2
17	120-6816	Caliper, Forged Dynalite	2
17A	120-6796-P	Caliper, Forged Dynalite, Polished	2
18	240-0140	Washer, Lock, 3/8 inch	4
19	230-0228	Bolt, 3/8-24 x 1.25 Long, Hex Head	4
20	300-2130	Spacer, Caliper to Bracket	4
21	240-1159	Shim, 0.032 inch Thick	16
22	150-8850K	Pad, BP-10, Axle Set	1
23	180-0055S	Pin, Cotter	2

NOTES:

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

Part Number 230-3328 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

Part Number 230-9103 Bolt Kit, bracket to spindle, includes part numbers 230-1493 and 240-0140

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

Item 9A is an optional item and is included in the "-D" Kits, Add "-D" to end of part number when ordering

Item 16A is an optional item and is included in the "-P" Kits, Add "-P" 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 1975 Mustang spindle may not fit a 1982 Mustang spindle).
- Verify the hub stud pattern in this kit (5 x 4.50 or 5 x 4.75) 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 (number 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 according to the vehicle manufacturer's instructions.

Remove the center cap, cotter pin, nut lock, wheel bearing nut and wheel bearing washer. Save the wheel bearing nut and nut locking device. Remove the brake drum or rotor and hub assembly, including the wheel bearings. Disconnect the brake hoses from the brake line at the body. Unbolt and remove the original caliper and caliper bracket. Remove the dust shield retaining bolts and the dust shield.

- Thoroughly clean the spindles.
- Position the caliper mounting bracket (1) on the spindle. **NOTE:** Be sure the heads of the caliper bracket (1) insert nuts are facing outward toward the wheel. Place one lock washer (2) on each of the three caliper bracket bolts (3). Mount bracket to the dust plate face of the spindle and align the three 3/8-16 holes in the spindle with the corresponding holes in the bracket (1). Apply red *Loctite*® 271 to all three bolt threads (3) and install. Torque bolts (3) to 260 **in-lb**.
- Install wheel studs (4) into the hub (5). Torque to 77 ft-lb. **NOTE:** There are two lug patterns of five holes each in the hub (5 x 4.50 and 5 x 4.75). Make sure of the correct hole pattern for the wheel application before installing the studs into the hub.

- Attach rotor adapter plate (8) to rotor (9) using bolts (10). Torque bolts (10) to 180 **in-lb**. Safety wire bolts (10) using standard 0.032 inch diameter stainless steel safety wire as shown in Figure 3. Please refer to Wilwood's data sheet DS-386 (available at www.wilwood.org/ds386.pdf) for complete safety wire installation instructions. **NOTE:** The large inside diameter side of the rotor (9) faces toward the rotor adapter plate (8) with the dished side of the rotor adapter plate (8) facing away from the rotor (9).

- Mount the adapter/rotor assembly (8 and 9) to the hub (5) using lock washers (11) and bolts (12). Torque bolts (12) to 22 ft-lb. Safety wire bolts (12).

- Pack the large inner bearing cone (6) with high temperature disc brake bearing grease (available from your local auto parts store) and install into the backside of the hub (5).

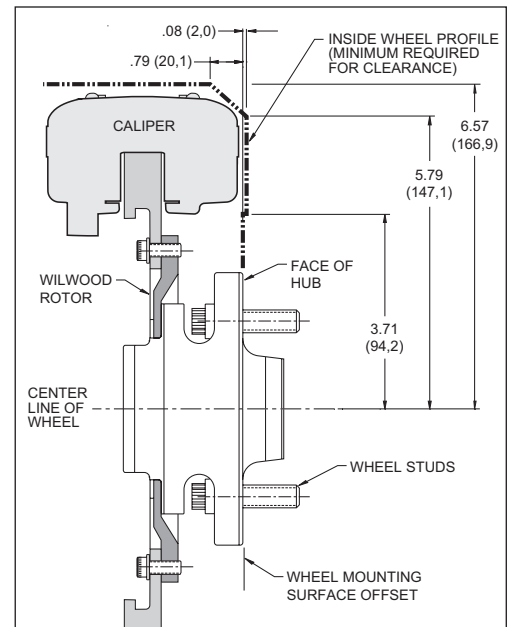


Figure 2. Wheel Clearance Diagram

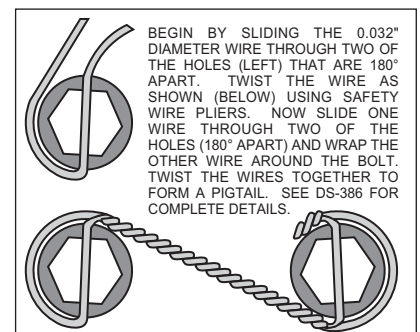


Figure 3. Safety Wire Diagram

General Information and Assembly Instructions (Continued)

- Install the grease seal (7) by pressing into the backside of the hub (5).
 - Pack the small outer bearing cone (13) with high temperature disc brake bearing grease and install into front of hub (5). Slide the hub assembly (5, 6, 7 and 9) with outer bearing cone (13) onto the spindle. Secure using spindle washer (14), stock adjusting nut and nut locking device. Adjust bearings per Original Equipment Manufacturer (OEM) specifications.
 - Install the o-ring (16) and the dust cap (15) onto the hub (5). Friction created by the o-ring (16) on the dust cap (15) keeps it from unscrewing on its own.
 - With the bleed screws pointing up, mount the caliper (17) onto the caliper bracket (1) using lock washers (18), bolts (19) and caliper spacer (20). Finger tighten. View the rotor (9) through the top opening of the caliper (17). The rotor (9) should be aligned in the center of the caliper (17). If not, adjust the caliper (17) by using 0.032 inch thick shims (21) placed between the caliper mounting bracket (1) and the caliper spacer (20). Finger tighten and recheck alignment. Apply red *Loctite*® 271 to bolt threads (19) and torque to 30 ft-lb. Safety wire caliper bolts (19).
 - Install the disc brake pads (22) and secure using cotter pin (23).
- 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. For your convenience, Wilwood offers a universal brake flex line hose kit, order P/N 220-7056 for the 14 inch length, or P/N 220-8307 for the 18 inch length. **THE ORIGINAL EQUIPMENT PRODUCTION RUBBER BRAKE HOSES SHOULD NOT BE USED.**
- Repeat assembly procedure for the other wheel.
 - Bleed the brake system (reference additional information on the last page as necessary).

Balancing the Brake Bias on 4 Wheel Disc Vehicles

•OE Style or Single Mount Race Pedal with Tandem Outlet Master Cylinder:

Front to rear caliper piston sizes, rotor diameters, and pad compounds must be initially configured to provide the correct range of vehicle bias when using a single bore / tandem outlet master cylinder. If excessive rear brake bias is experienced, an inline adjustable proportioning valve can be used to decrease the rear line pressure to help bring the vehicle into balance. If excessive front brake bias is experienced, first consideration should be given to increasing the rear brake bias to bring the vehicle into overall balance.

•Race Pedal with Dual Master Cylinders and Balance Bar:

Master cylinders must be sized to match the calipers and allow the pedal balance bar to operate near the center of its travel. If it is not possible to fine tune the bias within the adjustable range of the balance bar, then consideration must be given to changing a master cylinder bore size or some other aspect of the brake system to bring the car into balance. Larger bore master cylinders will generate less pressure while decreasing pedal travel. Smaller bores master cylinders will generate higher line pressures with an increase in pedal travel.

Additional Information and Recommendations

• Fill and bleed the new system with Wilwood Hi-Temp^o 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)
260-8419	Wilwood Proportioning Valve
290-0632	Wilwood Racing Brake Fluid (Hi-Temp ^o 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)
260-8555	Wilwood 1 inch Aluminum Tandem Chamber Master Cylinder
260-8556	Wilwood 1-1/8 inch Aluminum Tandem Chamber 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)
220-7056	Flexline Kit, Universal, 14 Inch, Domestic
220-7699	Flexline Kit, Universal, 16 Inch, Domestic
220-8307	Flexline Kit, Universal, 18 Inch, Domestic

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.