

ASSEMBLY INSTRUCTIONS
FOR
**SUPERLITE 6R BIG BRAKE FRONT KIT WITH HUB
AND 12.88" DIAMETER VENTED ROTOR**

**1965 - 1967 FORD MUSTANG V8 DISC/DRUM SPINDLE
1968 - 1969 FORD MUSTANG V8 DRUM SPINDLE ONLY**

PART NUMBER GROUP

140-12637

**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.



Need Additional Information?
Use Your SmartPhone and
Jump to Our Technical Tips
Section on Our Web Site.



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.

Photographic Tip

We suggest you take digital photos of the brake system setup before and during the disassembly procedure. This will aid in the event that something is not compatible with the new brake components and be a valuable tool to assist in the trouble-shooting process.

Important Notice - Read This First

Before any tear-down or disassembly begins, review the following information:

- Review the Wheel Clearance Diagram (Figure 3, page 5) to verify that there is adequate clearance with the wheels you will be using with the installation.
- Front brake kits do not include flex lines. OEM brake lines will not adapt to Wilwood calipers. 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.

Caliper Mounting Bracket - Mounting Hole Designations

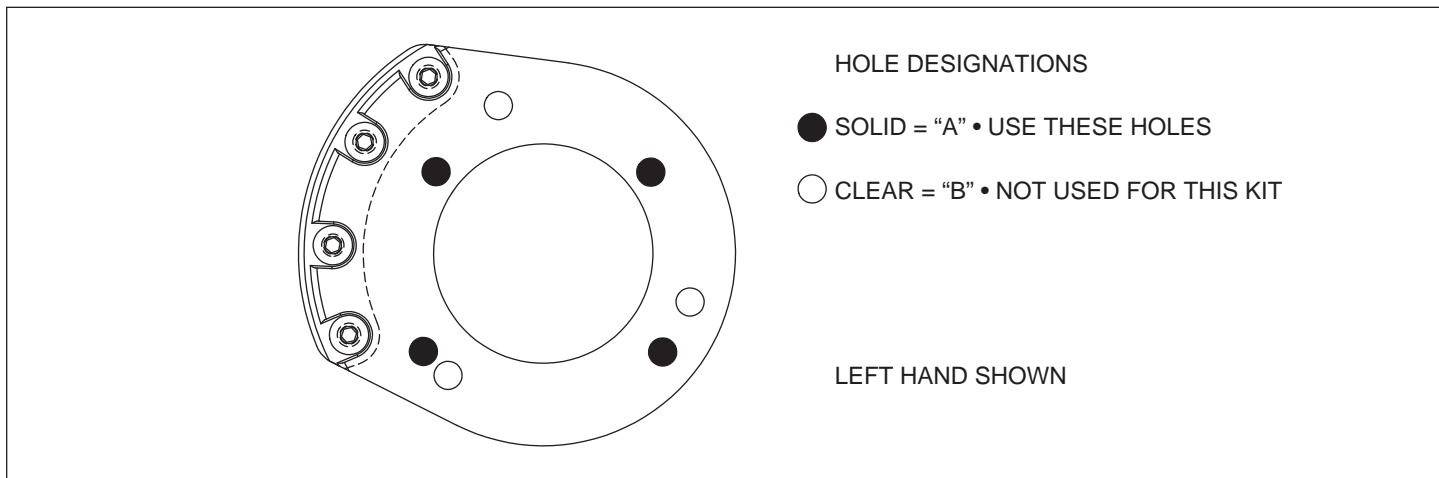


Figure 1. Wilwood Caliper Mounting Bracket

General Information

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 1965 Ford Mustang spindle will not fit a 1982 Ford Mustang spindle).
- Verify the new hub stud pattern in this kit matches the lug pattern of the vehicles wheels.
- Verify your wheel clearance using Figure 3.
- Inspect the package contents against the parts list to ensure that all components and hardware are included.

Exploded Assembly Diagram

WARNING
 INSTALLATION OF THIS KIT SHOULD **ONLY** BE PERFORMED BY PERSONS EXPERIENCED IN THE INSTALLATION AND PROPER OPERATION OF DISC BRAKE SYSTEMS.

NOTE
 SPECIFIC PARTS MAY VARY FROM DIAGRAM

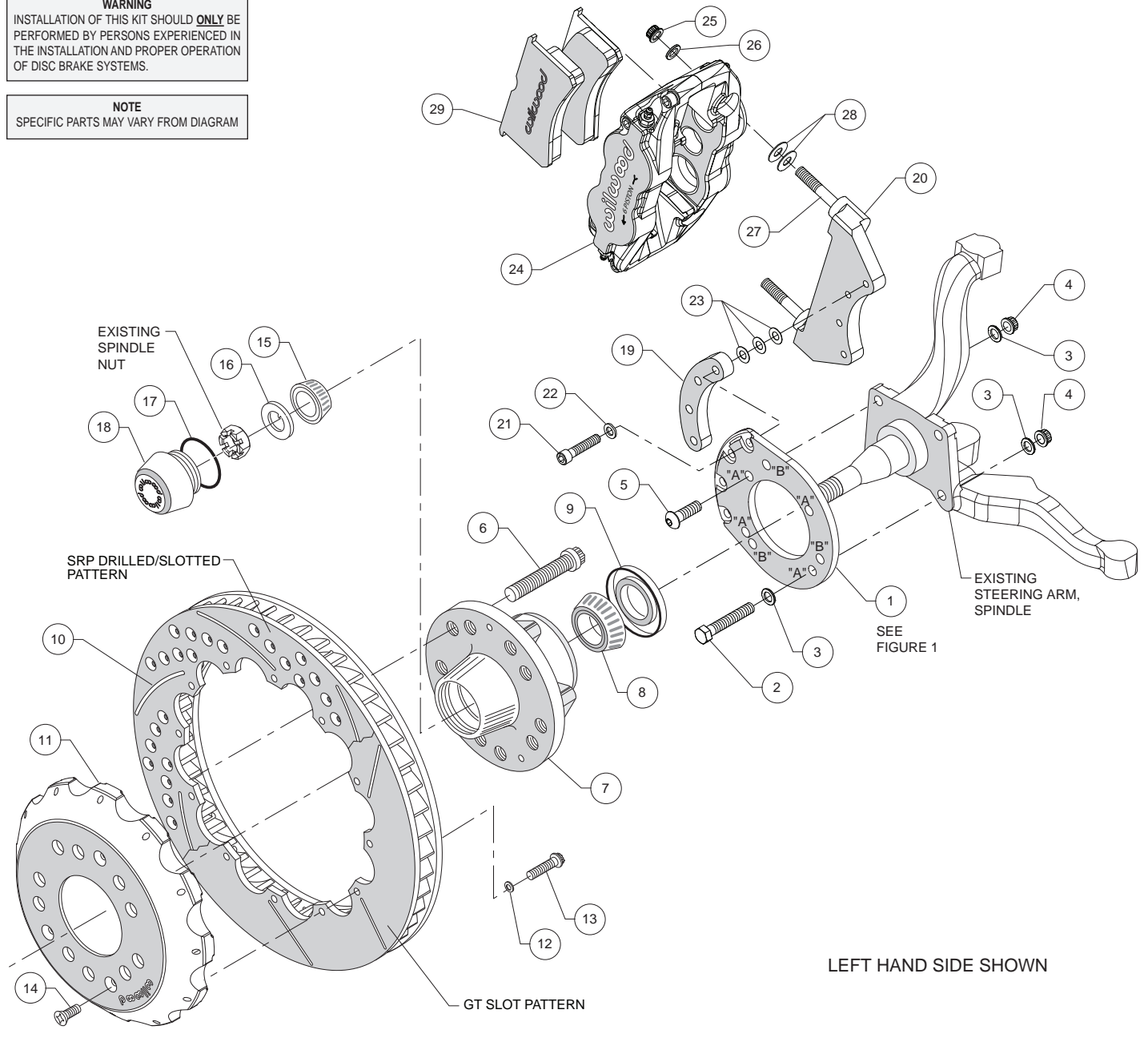


Figure 2. Typical Installation Configuration

Parts List

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	249-11063/64	Bracket, Spindle Mount	2
2	230-11057	Bolt, 3/8-24 x 2.25 Long, Hex Head	2
3	240-10190	Washer, .391 I.D. x .625 O.D. x .063 Thick	10
4	230-9183	Nut, 3/8-24, Self Lock, 12 Point	8
5	230-1381	Bolt, 3/8-24 x 1.25 Long, Button Head	6
6	230-6959	Stud, 1/2-20 x 2.00 Long, 12 Point	10
7	270-9502	Hub Assembly	2
8	370-0879	Cone, Inner Bearing	2
9	380-0885	Seal, Grease	2
10	160-6833/34	Rotor, 1.10" Thk x 12.88" Dia, 12 x 8.75" Bolt Circle	2
10A	160-6835/36-BK	Rotor, Drilled and Slotted (pair, one each, left and right)	2
11	170-10489	Hat, 1.62 Offset	2
12	240-11240	Washer, .265 I.D. x .500 O.D. x .063 Thick	24
13	230-8037	Bolt, 1/4-20 x .75 Long, 12 Point	24
14	230-10419	Bolt, 1/4-20 x .50 Long, Flat Head	6
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	300-12642	Spacer, .500 Thick	2
20	250-12639	Bracket, Caliper	2
21	230-12811	Bolt, 5/16-18 x 1.50 Long, SHCS	8
22	240-10191	Washer, .328 I.D. x .562 O.D. x .063 Thick	8
23	240-9609	Shim, .015 Thick	36
24	120-11780/81-BK	Caliper, Forged Narrow Superlite 6R	2
24A	120-11780/81-RD	Caliper, Forged Narrow Superlite 6R, Red	2
25	230-9183	Nut, 3/8-24, Self-Lock, 12 Point	4
26	240-10190	Washer, .391 I.D. x .625 O.D. x .063 Thick	4
27	230-9078	Stud, 3/8-16 x 3/8-24 x 2.50 Long (pre-installed in bracket)	4
28	240-1159	Shim, .035 Thick	12
29	150-8855K	Pad, BP-10, Axle Set	1

NOTES:

Part Number 230-7032 Bolt Kit, hat to hub, includes part number 230-10419

Part Number 230-8008 Bolt Kit, rotor to hat, includes part numbers 230-8037 and 240-11240

Part Number 250-12640 Bracket Kit, caliper to bracket, includes p/n's 230-9078, 230-9183, 240-1159, 240-10190 and 250-12639

Part Number 230-12643 Bolt Kit, bracket to spindle, includes part numbers 230-1381, 230-9183, 230-11057 and 240-10190

Part Number 230-12644 Bolt Kit, bracket to bracket, includes part numbers 230-12811, 240-9609 and 240-10191

Item 10A is an optional item and is included in the (D) drilled rotor kits. Add -D to end of part number when ordering.

Item 24A is an optional item and is included in the (R) red caliper kits. Add -R to end of part number when ordering.

Disassembly Instructions

Disassembly Instructions:

- Disassemble the original equipment front brakes:

Raise the front wheels off the ground and support the front suspension according to vehicle manufacturer's instructions.

Remove the front wheels and completely disassemble the stock brake system down to the bare spindles. Save the Original Equipment Manufacturer (OEM) spindle nuts and nut locks (if any).

- Remove any nicks or burrs on the spindle mount faces that may interfere with the installation of the new brake components.

- Clean and de-grease the spindles and saved components.

Assembly Instructions

Assembly Instructions (numbers in parenthesis refer to the parts list and Figure 2 on the preceding pages):

•**NOTE:** This kit uses a mounting bracket (1) with two bolt patterns in it. The four mounting bolt pattern (designated "A"), Photo 1 and Figure 1 should be used to mount this bracket kit. The three mounting bolt pattern (designated "B"), is not used with this kit. Refer to Figures 1 and 2 for the basic installation position of the bracket and the "A" and "B" reference designations (not physically marked on the brackets).

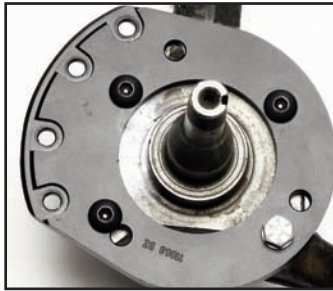


Photo 1

•Align bracket, using the four "A" holes, to the face of the spindle and attach using bolts (2 and 5), washers (3), and lock nuts (4), as shown in Figure 2 and Photo 1. Temporarily tighten the mounting bolts. **NOTE:** The bracket must fit squarely against the mounting points on the spindle. Inspect for interference from casting irregularities, machining ridges, burrs, etc. Torque lock nuts (4) to 25 ft-lb.



Photo 2

•Install wheel studs (6) into the hub (7), Photo 2. Torque to 77 ft-lb. **NOTE:** There are two five lug patterns in the hub (5 x 4.50 and 5 x 4.75). Ensure the correct hub stud pattern is being used to fit the wheel application.

•Pack the large inner bearing cone (8) with high temperature disc brake bearing grease (available from your local auto parts store) and install into the backside of the hub (7), Photo 3.



Photo 3

•Install the grease seal (9) by pressing into the backside of the hub (7), flush with the end of the hub, Photo 3.



Photo 4

•Pack the small outer bearing cone (15) with high temperature disc brake bearing grease and install into hub (7). Slide the hub assembly onto the spindle. Secure using spindle washer (16) and OEM spindle nut, Photo 4. Adjust bearings per OEM specifications. Install saved OEM nut lock (if any) and a new cotter pin (not included).

•Screw dust cap (18) into hub (7), Photo 5. Friction created by the o-ring (17) on the dust cap keeps it from unscrewing. **NOTE:** The O.D. of the existing OEM spindle washer may be larger than the I.D. of the dust cap not allowing it to seat against the hub face. Therefore, use the spindle washer (16) supplied with the kit instead of the OEM washer.



Photo 5

•Orient the rotor (10) and the hat (11) as shown in Figure 2 and Photo 6. Attach rotor to hat using bolts (13) and washers (12). Using an alternating sequence, apply red Loctite® 271 to the



Photo 6

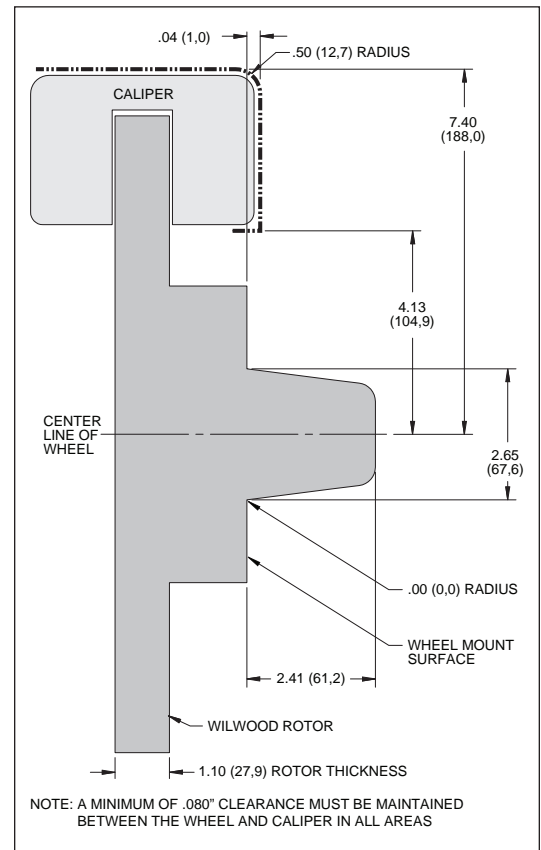


Figure 3. Wheel Clearance Diagram

Assembly Instructions (Continued)

threads, and torque to 155 **in-lbs.** for an added measure of security, the bolts may be safety wired using standard 0.032 inch diameter stainless steel safety wire as shown in Figure 4. Refer to Wilwood's data sheet DS-386 (available at www.wilwood.com/Pdf/DataSheets/ds386.pdf) for complete safety wire installation instructions.

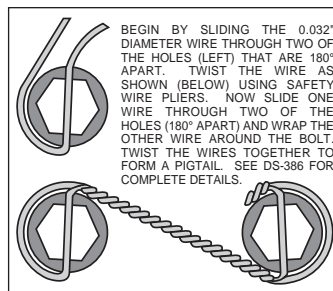


Figure 4. Safety Wire Diagram

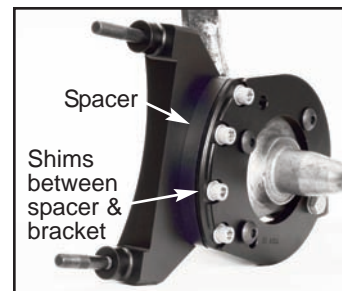


Photo 7

- Slide the hat/rotor assembly (10/11) onto the hub (7) taking care to align the small countersunk holes in the hat with the small threaded holes in the hub (7). **NOTE:** The hat must fit flush against the hub face or excessive rotor run out may result. Install three flat head screws (14) through the small holes in the hat, Photo 5, and torque to 85 **in-lb.**

- Attach the caliper mounting bracket (20) to the spindle bracket (1) using bolts (21), washers (22), and spacer (19) as shown in Figure 2 and Photo 7. Initially place three .015" thick shims (23) on each bolt between the spacer and the caliper bracket. Temporarily tighten the mounting bolts. Later, after the caliper alignment has been checked, the mount bolts will be secured using red *Loctite*® 271.



Photo 8

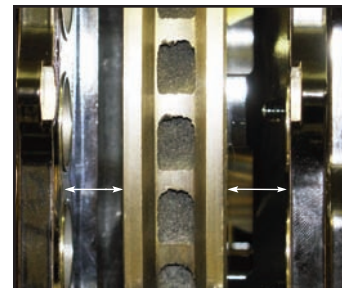


Photo 9

- **NOTE:** This kit contains distinct right and left hand calipers that must be mounted in a specific direction, as described below. Lubricate the caliper mounting studs (27) with lightweight oil. Initially place two .035" thick shims (28) on each stud between the caliper and the bracket, as shown in Figure 2 and Photo 8. Mount the caliper (24) onto the bracket (20) using lock nuts (25) and washers (26), Figure 2. Ensure that the caliper is mounted so the largest pistons are at the rotor exit end of the caliper, in relation to the direction of rotor rotation. Temporarily tighten the lock nuts and view the rotor through the top opening of the caliper. The rotor should be centered in the caliper, Photo 9. If not, adjust by adding or subtracting shims (23) between the caliper bracket (20) and the spacer (19). Always use the same amount of shims on each of the four mounting bolts. Once the caliper alignment is correct, remove the bracket mounting bolts one at a time, apply red *Loctite*® 271 to the threads, and torque to 25 ft-lb.



Photo 10

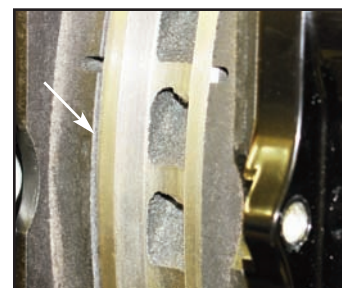


Photo 11

- Remove the caliper center bridge pad retainer bolt, nut, and tube from the caliper. Insert the brake pads (29) into the caliper, with the friction material facing the rotor, as shown in Photo 10. Check that the top of the brake pad is flush with the outside diameter of the rotor, Photo 11. If not, adjust by adding or subtracting shims (28) between the caliper and the bracket. After the caliper pad height is set, torque the caliper lock nuts (25) to 30 ft-lb. Secure the brake pads in place with the center bridge pad retainer tube, bolt, and locknut. The locknut should be snug without play in the bolt or tube. Be cautious not to over tighten.

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

- **NOTE:** The caliper in this brake kit utilizes a 1/8-27 NPT pipe thread inlet. OEM rubber brake hoses generally cannot be adapted to Wilwood calipers. The preferred method is to use steel adapter fittings at the caliper, either straight, 45 or 90 degree 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 a brake flex line hose kit to fit this application, order P/N 220-12168. Hose kits include hoses, fitting, etc., all in one package for this application.

Assembly Instructions (Continued)

- NOTE:** Specified brake hose kits may not work with all Years, Makes and Models of vehicle that this brake 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.
- 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 on page 8 for proper bleeding instructions. Check system for leaks after bleeding.
- Install the wheel and torque to manufacturer's specifications.

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 for racing or performance driving.*

- 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.

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 STEPS:

Once the brake system has been tested and determined safe to operate the vehicle, follow these steps for bedding of all pad materials and rotors. This procedure should be performed on a race track or other safe location where you can safely and legally obtain speeds up to 65 MPH while also being able to rapidly decelerate.

- Proceed with a series of 8-10 hard stops from 55-65 MPH down to 25 MPH allowing 20-30 seconds of cool down time between each stop.
- Drive at a moderate cruising speed, with the least amount of brake contact possible, until most of the heat has dissipated from the brakes. Avoid sitting stopped with the brake pedal depressed to hold the car in place during this time. Park the vehicle and allow the brakes to cool to ambient air temperature.

Associated Components

<u>PART NO.</u>	<u>DESCRIPTION</u>
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° 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)
220-12168	Flexline Kit, Front 1965-69 Ford Mustang