F5010
PRO TOURING FLOATER KIT

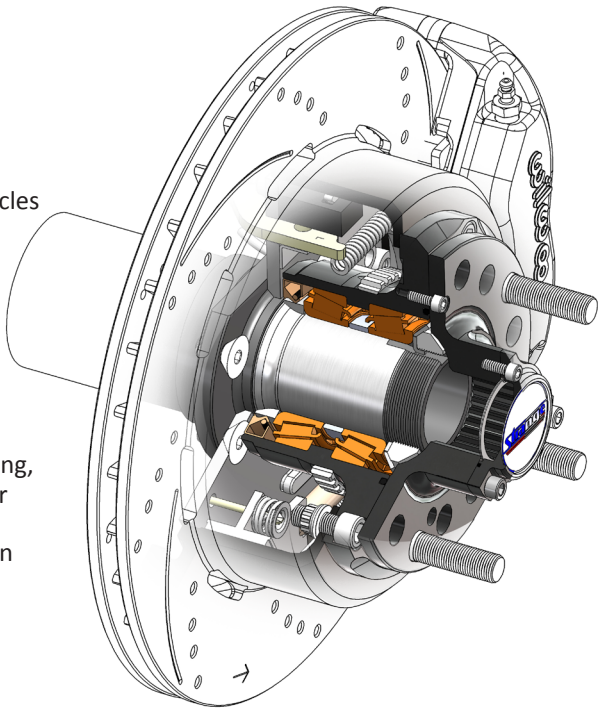
Installation to be performed by a qualified technician.

Optional Brake Kit #

B2711WC Black Calipers & 12.19" Brake Discs
B2711WCR Red Calipers & 12.19" Brake Discs
B2714WC Black Calipers & 14.00" Brake Discs
B2714WCR Red Calipers & 14.00" Brake Discs

*Race*Strange

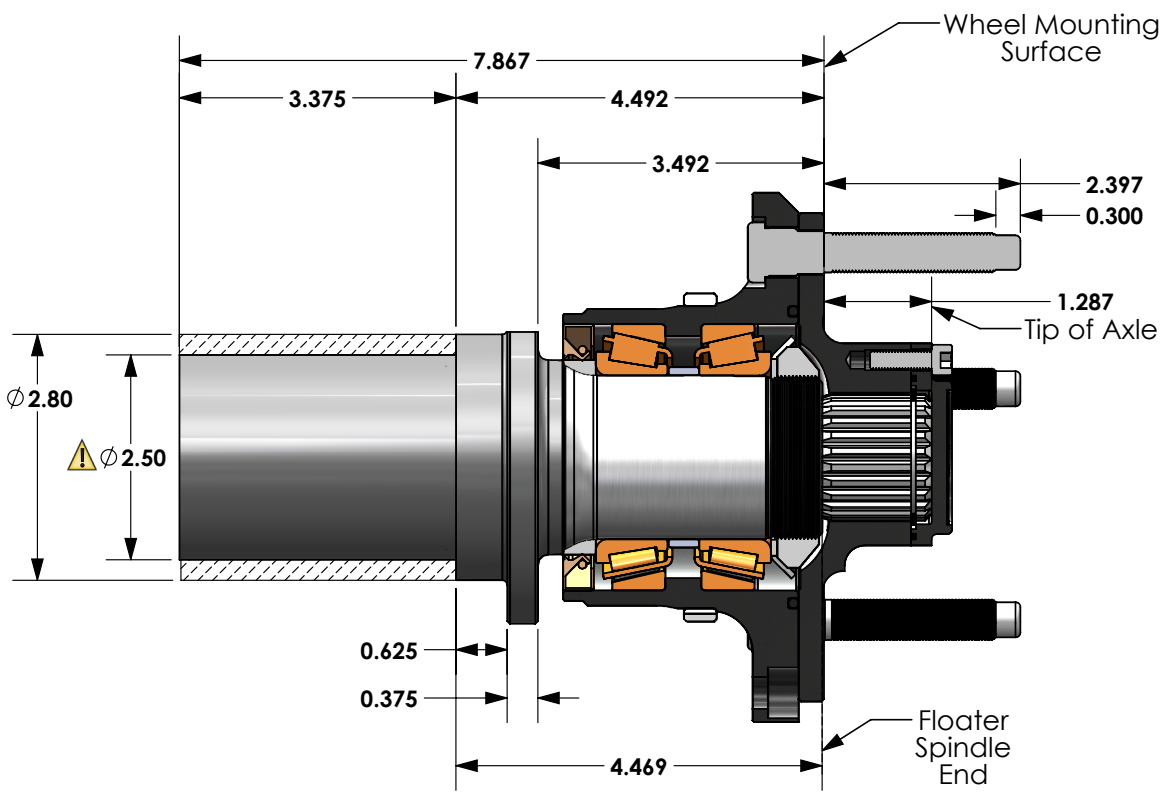
- 2” O.D. Spindle
- 35 Spline Drive Plates
- Thru-Hardened Hy-Tuf Floater Axle Shafts
- 5/8”-18 or 1/2”-20 Press-in Wheel Studs on 4-½”, 4-¾ or 5” Bolt circles
- 4 Piston Calipers
- Internal Parking Brake
- 14" or 12.19” Vented, Slotted or Drilled Wilwood Brake Rotors
- Optional ABS Compatibility (05’ & later Mustang Sensors)
- Preload spacer between the tapered bearings bolsters maximum spindle nut torque eliminating bearing end play.
- Zero end play in the bearings eliminates piston knock-back encountered during hard cornering.
- Floater spindle supports vehicle weight and resists cornering, braking, and accelerating loads leaving the floater axle solely responsible for transmitting torque.
- Rigid full floating design dramatically increases safety in comparison to a traditional flanged axle assembly.
- Compact brake gap (3.50”) clears most suspension components located near original housing ends.



P5010 Kit Contents

ITEM#	PART#	QTY	DESCRIPTION
1	A1050D	6	1/4-28 x 3/4" SHCS
2	F5056F	2	40 Spline Floater Cap
3	A1RS	2	Decal
4	F2200B	2	O-Ring -032
5	F5056L	4	10-24 x 1/2" SHCS
6	F5056A	2	Drive Plate
7	A1024B	2	O-Ring -237
8	F5056C	2	Spindle Nut
9	F5056D	2	Spindle Nut Retainer
10	N1948	4	Timken Bearing LM104949
11	F5056E	2	Preload Spacer
12	F5056K	10	3/8-24 x 3/4" SHCS
13	F5056H	2	Drive Hub
14	N1949	4	Timken Cup LM104911 *(pre-installed)*
15	A3164A	10	1/2-20 x 3.115 Press-in Stud
16	S3402N	10	3/8" Washer
17	F1282	10	3/8-24 Jet Nut
18	F5056J	2	Seal National 413246N
19	F5056B	2	Spindle Ring
20	F1237D	10	3/8-24 x 3/4" FHSCS
21	F5056G	2	Street Floater Spindle
22	F5056W	1	Spindle Spanner Wrench

Spindle Dimensions & Welding Instructions



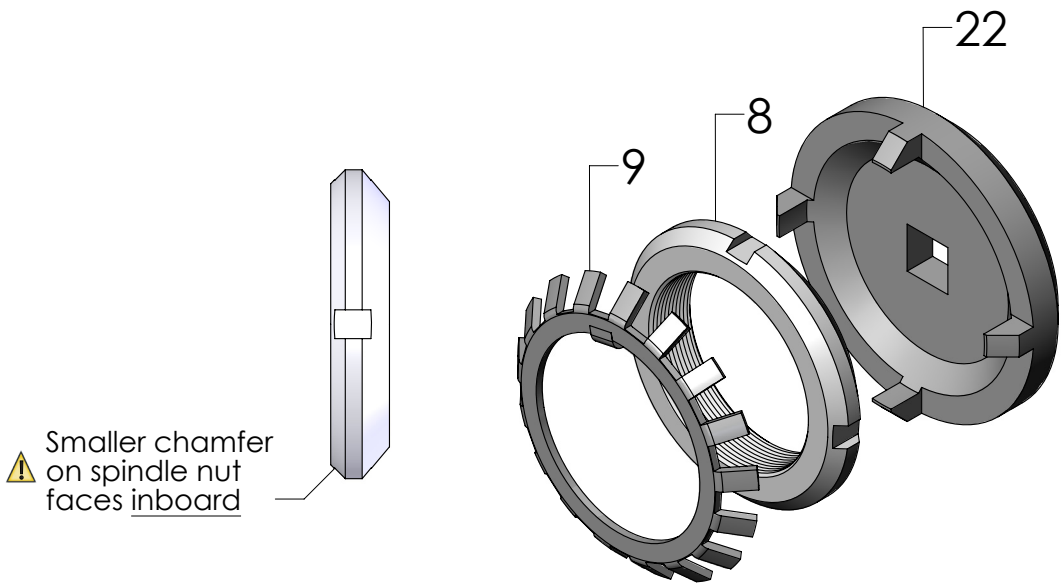
Note: 2.50" inside diameter of housing tubes may vary. Please refer to step # 2 for instructions.

Welding Guidelines

A professional and qualified chassis shop MUST perform the welding of the spindles to the housing tubes. This is very important due to the fact that if care is not taken in this crucial step leaks can occur, the axles could bind, and erratic handling could result from misaligned spindles.

1. All spindles are constructed from normalized aircraft quality 4130 hot rolled steel. The spindles are black oxidized for cosmetic purposes which does not effect the welding process.
2. The street floater spindles have 2.800" outside diameter that must be turned down to fit the specific housing tube inside diameter. Typically the inside diameter is 2.50" but can vary. A suggested starting point is to turn the spindle down 0.001" smaller than the measured housing tube inside diameter for a slip-fit leaving 0.625" unmachined from the backside of the flange as shown. This will provide a stop against the housing tube and give sufficient clearance to weld the spindle to the housing tube. Once both spindles fit into the housing, a line up bar must be used to verify straightness. If the line up bar does not pass through both spindles, then the outside diameter of the spindles must be turned down further and checked again with the line up bar. Do not turn down the diameter more than necessary.
3. Drill Ø0.375" to Ø0.500" holes in the housing tube only (**note the spindle**) to facilitate plug welding. Drill two holes 180 degrees to each other in two locations (four holes per spindle) where feasible.
4. Weld the spindle 360 degrees to the end of the housing tube. The weld must be leak free.

Axle Nut Installation



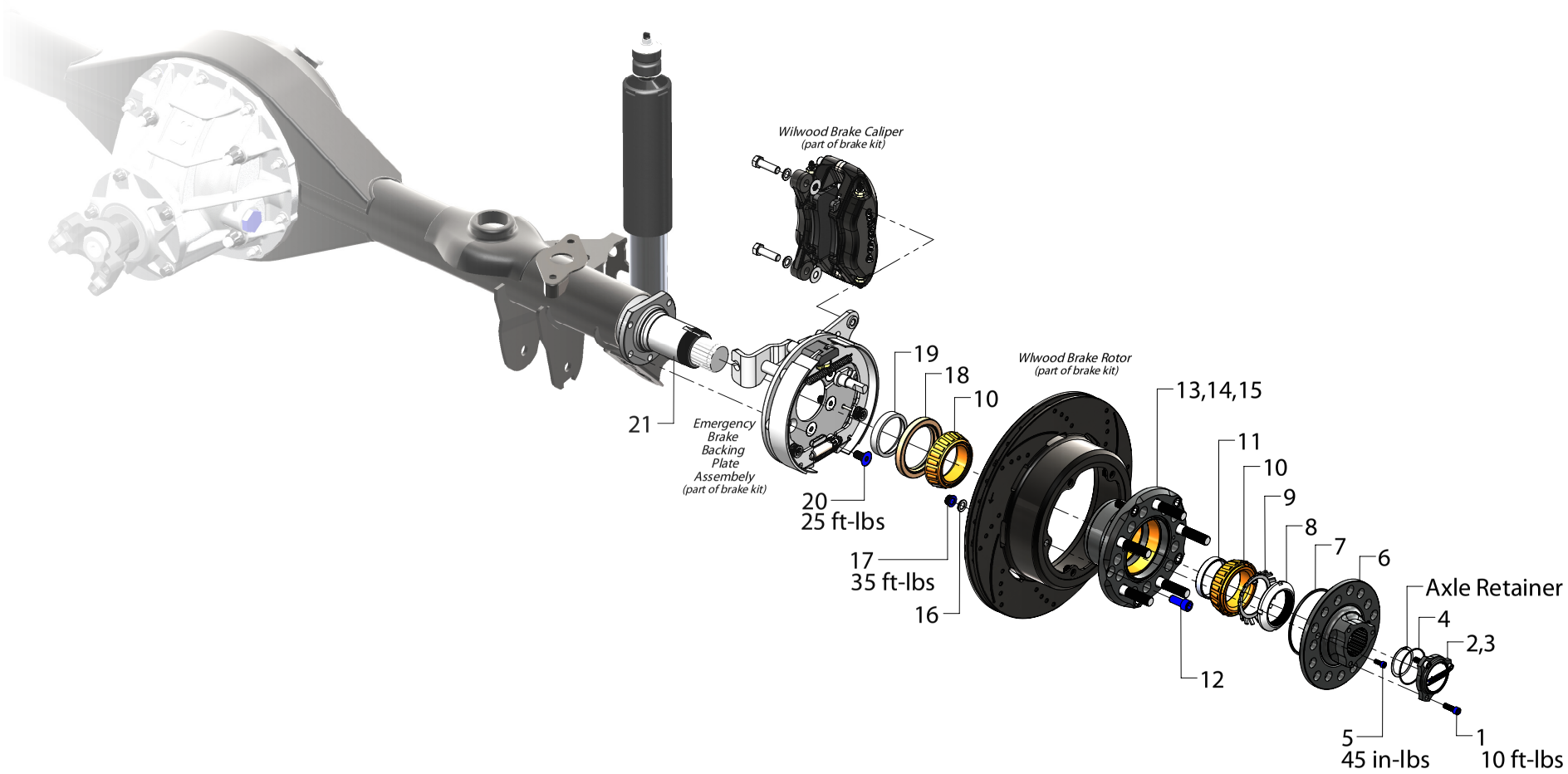
1. Ensure the tab on the inside diameter of the spindle nut retainer (9) slides into the grove of the spindle shaft.
2. The spindle nut is installed using the spindle nut wrench (22). Torque the spindle nut to 50-60 ft-lbs.
3. Bend one of the tabs on the outside diameter of the spindle nut retainer (9) into the slots on the spindle nut.

Installation Notes

- Use the assembly diagram shown on page 4 to install the components. If you have any questions, concerns or comments please feel free to contact Strange Engineering.
- For specific brake information including wheel clearance and brake testing please refer to Wilwood instructions attached at the end of this document.
- Prior to installing the bearings (10), ensure to pack the bearings with a high quality wheel bearing grease (NLGI #1 or NLGI #2). A bearing packer is recommended. Otherwise, work as much grease as possible by hand around the rollers.
- When pressing the hub seal into the hub, ensure the face stamped with the part number faces inboard.
- After installation rotate the hub and ensure all the components have seated properly.

Strange Engineering

Exploded View of Steet Floater Assembely



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ASSEMBLY INSTRUCTIONS

FOR

DYNALITE PRO SERIES REAR PARKING BRAKE KIT WITH 12.19” DIAMETER VENTED ROTOR (3.49 OFFSET)

STRANGE ENGINEERING FLOATER

PART NUMBER GROUP

Z-140-12420

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.

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.**
- **Rear brake kits are not supplied with hydraulic lines or fittings and may require the purchase of additional lines or fittings to complete the installation. Wilwood offers an extensive listing of brake lines and fittings on our web site: www.wilwood.com.**
- **Rear brake kits are 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.**

Exploded Assembly Diagram

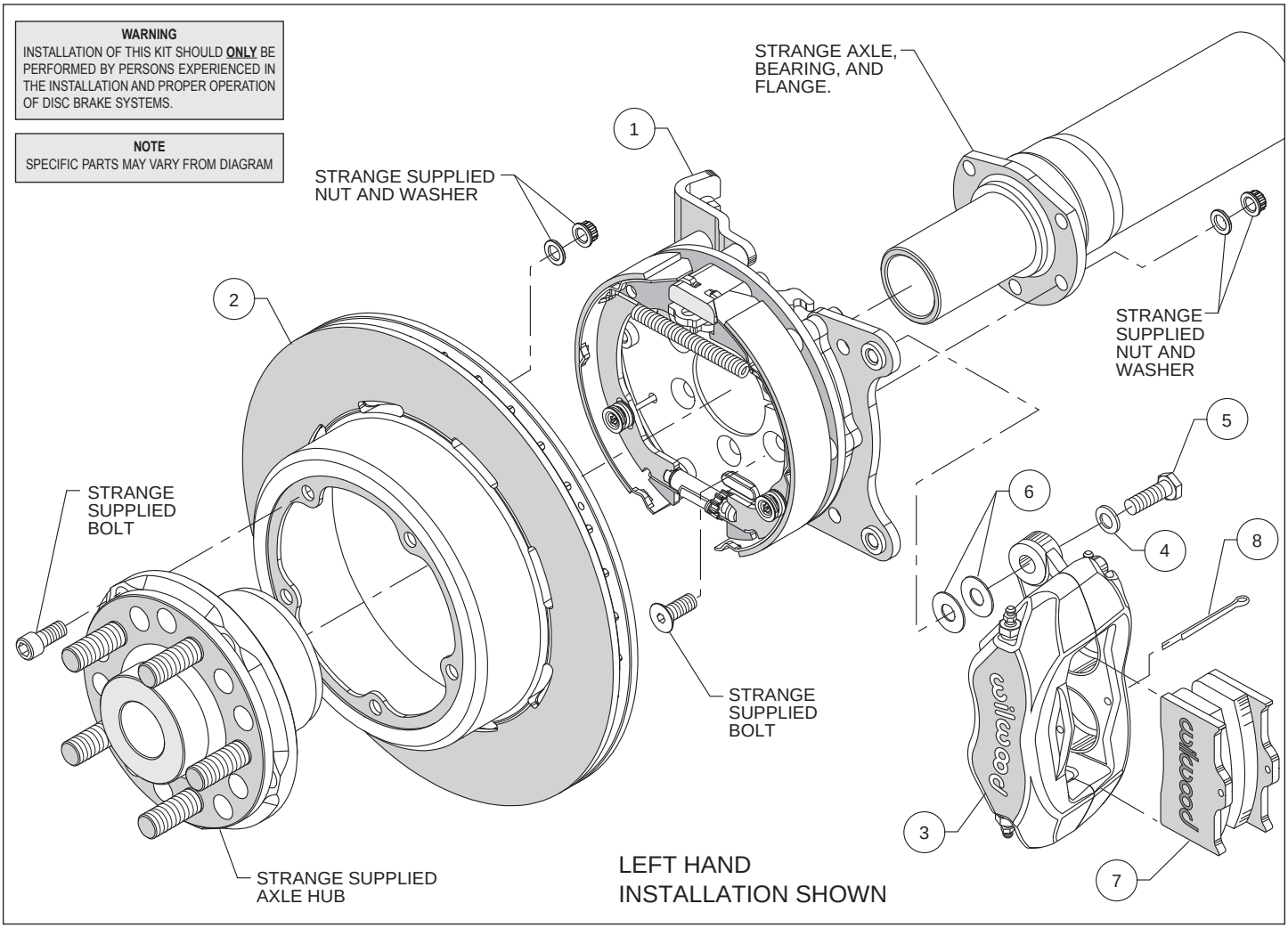

Figure 1. Typical Installation Configuration

Parts List

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	Z-249-12422/23	Bracket Kit (pair, one each, right and left)	1
2	Z-160-12421	Rotor, ULHP - .81” x 12.19” Dia.	2
3	120-6806	Caliper, Forged Dynalite	2
4	240-10190	Washer, .391 I.D. x .625 O.D. x .063 Thick	4
5	230-10025	Bolt, 3/8-24 x 1.25 Long, Hex Head	4
6	240-1159	Shim .035 Thick	16
7	150-8850K	Pad, BP-10, Axle Set	1
8	180-0055S	Pin, Cotter	2

NOTES: Part Number 230-11861 Bolt Kit, caliper to bracket, includes part numbers 230-10025, 240-10190 and 240-1159

General Information and Disassembly 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 rear 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 the exact model rear end. This kit is designed to fit the Strange Engineering floating rear axle and hub using the Strange Engineering floater axle mounting flange shown in figure 4.

- Verify your wheel clearance using Figure 2.

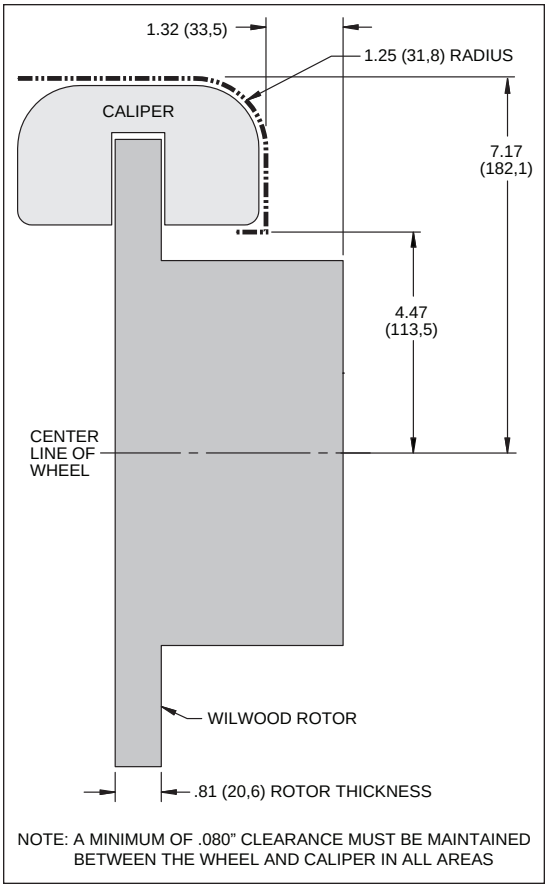

Figure 2. Wheel Clearance Diagram

Disassembly

- Disassemble the original equipment 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 brakes down to the bare axle.

- Remove any nicks or burrs on the axle housing flange that may interfere with the installation of the new brake components.

- Clean and de-grease the axle and housing flange.

Assembly Instructions

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.**

Assembly Instructions (Continued)

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.

•Orient the bracket assembly (1) as shown in Figure 1 and slide it onto the axle. Ensure that the bracket assembly backing plate fits flush against the axle housing flange. Mount the bracket assembly to the axle flange using bolts, washers, and nuts (all Strange supplied) as shown in Figure 1. Apply red *Loctite*® 271 to the bolt threads and torque to Strange specifications.

Photo 1

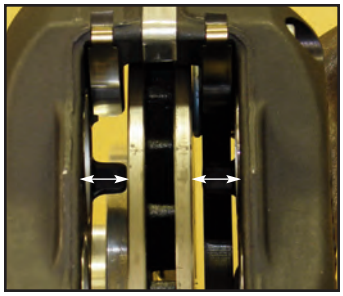

Photo 2

•Orient the rotor (2) and the axle hub (Strange supplied) as shown in Figure 1. Attach the rotor to the axle hub using bolts, washers, and nuts (all Strange supplied) as shown in Figure 1. Apply red *Loctite*® 271 to the bolt threads and torque to Strange specifications.

•Slide the rotor/hub assembly onto the axle as shown in Figure 1 and secure per Strange specifications.

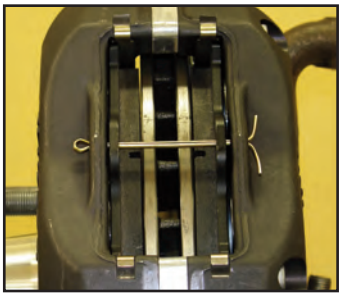

Photo 3

•***NOTE:*** *Please reference the caution statement at the beginning of the assembly instructions.* Mount the caliper (3) onto the caliper mounting bracket (1) using bolts (5) and washers (4), as shown in Figure 1. Initially place two .035" thick shims (6) on each bolt between the caliper and the bracket, Photo 1. Temporarily tighten the mounting bolts and view the rotor (2) through the top opening of the caliper. The rotor should be centered in the caliper, Photo 2. If not, adjust by adding or subtracting shims between the bracket and the caliper. Always use the same amount of shims on each of the two mounting bolts. ***NOTE:*** *The end of each bolt must be flush with or slightly protruding from the head of the clinch nut, as shown in Figure 3.* If necessary place spare shims between washer (4) and caliper mounting ear to achieve the proper clinch nut engagement. Once the caliper alignment and clinch nut engagement are correct, remove the bolts one at a time, apply red *Loctite*® 271 to bolt threads, and torque to 40 ft-lb.

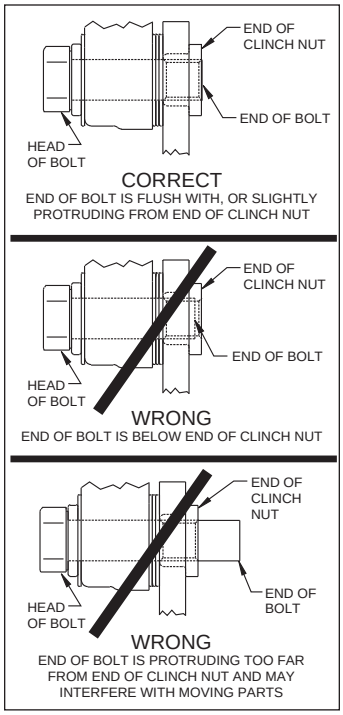

Figure 3. Clinch Nut Engagement Diagram

•Install the disc brake pads (7) into the caliper, with the friction material facing the rotor (2), and secure in place using cotter pin (8), Photo 3.

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

•***NOTE****: Clevis and cable kits which attach to the parking brake assembly are not included in the Wilwood parking brake kit.* Wilwood offers a generic style parking brake cable kit, P/N 330-9371 for this application which can be ordered separately from your local Wilwood dealer or by calling Wilwood customer service at (805) 388-1188.

•Before final installation of the wheel, remove the rubber grommet in the bracket kit assembly (1) and adjust the parking brake shoes outward (using a drum shoe adjustment tool available at your local auto parts store) while spinning the rotor/hub (2) until a slight drag is felt against the hat/drum. Replace the rubber grommet when finished.

Assembly Instructions (Continued)

•***NOTE****: OEM rubber brake hoses generally cannot be adapted to Wilwood calipers. The caliper inlet fitting is a 1/8-27 NPT.* 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. **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 universal brake flex line hose kits, order P/N 220-7056 for the 14 inch length, P/N 220-7699 for the 16 inch length, or P/N 220-8307 for the 18 inch length. Hose kits include hoses, fitting, etc., all in one package for this application.

•***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 6 for proper bleeding instructions. Check system for leaks after bleeding.

• Install the wheel and torque lug nuts to manufacturer's specification.

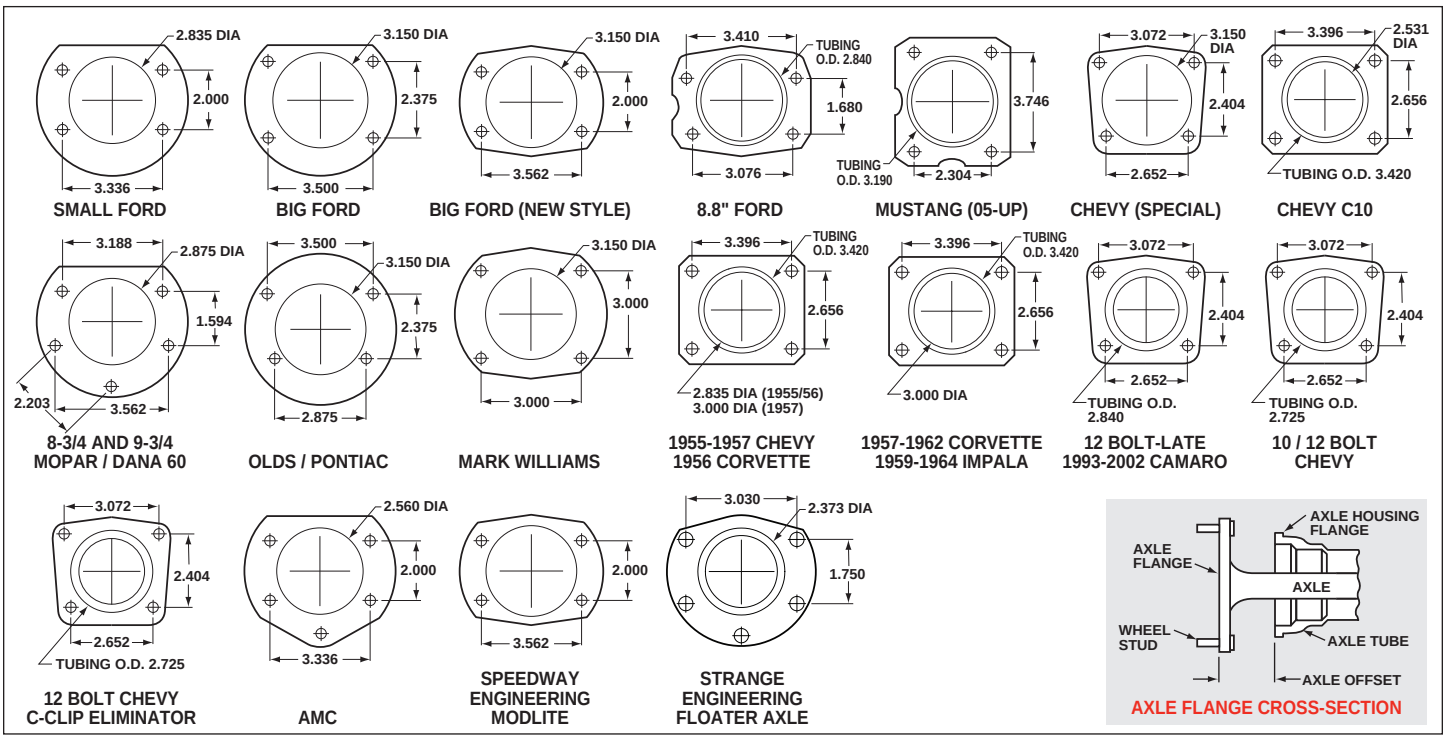

Figure 4. Rear Housing Flange Chart and Axle Flange / Offset Cross-Section

Additional Information and Recommendations

•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 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 flow back 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 flow back 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.

•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 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° 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)
220-7056	Flexline Kit, Universal, 14 Inch, Domestic
220-7699	Flexline Kit, Universal, 16 Inch, Domestic
220-8307	Flexline Kit, Universal, 18 Inch, Domestic