www.wilwood.com

ASSEMBLY INSTRUCTIONS

FOR

DYNAPRO LOW-PROFILE PRO SERIES REAR PARKING BRAKE KIT WITH 11.00” DIAMETER VENTED ROTOR (2.46 OFFSET)

1959 - 1964 CHEVY IMPALA / 1957 - 1962 CHEVY CORVETTE

PART NUMBER GROUP

140-11827

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.**

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.

Exploded Assembly Diagram

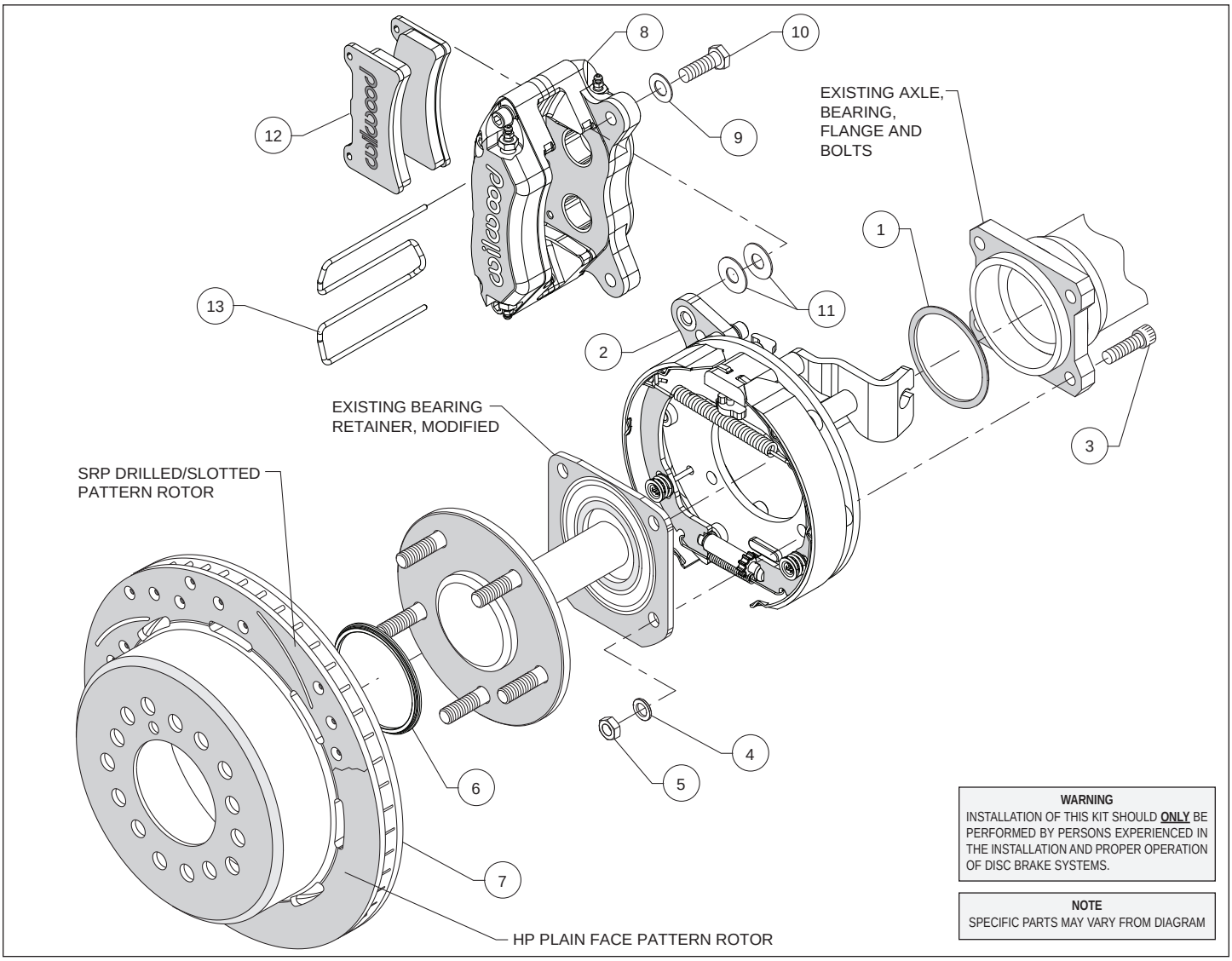

Figure 1. Typical Installation Configuration

Parts List

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	300-11341	Axle Shim, 2.60 I.D. x 2.94 O.D. x .049 Thick	2
2	249-11823/24	Bracket Kit (pair, one each, left and right)	1
3	230-2090	Bolt, 3/8-24 x 1.25 Long, SHCS	8
4	240-10190	Washer, .391 I.D. x .625 O.D. x .063 Thick	8
5	230-5989	Nut, 3/8-24, Center Lock, Hex Head	8
6	300-11338	Adapter, Rotor Registration	2
7	160-11364	Rotor, ULHP - .81” x 11.00” Dia.	2
7A	160-11374/75-BK	Rotor, Black, SRP Drilled and Slotted (one each, right and left)	2
8A	120-11370	Caliper, DynaPro, Low-Profile	2
8AA	120-11370-RD	Caliper, DynaPro, Low-Profile, Red	2
8B	120-12160	Caliper, Forged DynaPro, Low-Profile	2
8BB	120-12160-RD	Caliper, Forged DynaPro, Low-Profile, Red	2
9	240-10190	Washer, .391 I.D. x .625 O.D. x .063 Thick	4
10	230-10025	Bolt, 3/8-24 x 1.25 Long, Hex Head	4
11	240-1159	Shim, .035 Thick	16
12	150-11363K	Pad, BP-10 Compound, Axle Set	1
13	300-9636	Pad Clip Retainer	2

NOTES: Part Number 230-11861 Caliper Mounting Bolt Kit, includes P/N’s 230-10025, 240-10190 and 240-1159
Part Number 230-11448 Caliper Bracket Mounting Bolt Kit, includes P/N’s 230-2090, 230-5989 and 240-10190
Item 7A is an optional item and is included in the “-D” drilled rotor kits. Add ”-D” to end of part number when ordering.
Kit will contain either caliper, 8A or 8B.
Item 8AA 8BB are optional items and included in the “-R” red caliper kits. Add “-R” to end of part number when ordering.

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 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 make and model year of your vehicle. This kit is designed for direct bolt-on installation to 1959-1964 Chevrolet Impala / 1957-1962 Chevrolet Corvette axle housing flange. Reference Figure 6.

- Verify your wheel clearance using Figure 2.

- **Verify The Following Measurements Before Assembly.**
  - Bearing outside diameter.
  - Axle housing flange mounting pattern to pattern in bracket.
  - Stud pattern on axle flange to stud pattern in hat.
  - Axle center register diameter is 2.82”, Figure 3
  - Dimension from wheel side of axle flange to wheel side of axle housing flange (see Figure 6, lower right hand corner). This dimension is critical to ensure proper alignment of the rotor to the caliper, and should match offset given in the kit description.
  - The Wilwood hat utilized in this kit is drilled for 1/2” diameter wheel studs. ***NOTE:*** *Many OEM GM axles have 7/16” (0.44”) wheel axle studs.* It is recommended that you upgrade to 1/2” studs. Dependent on the type of axle, this may be a simple stud change, or may require the services of a machine shop to perform.
  - Maximum axle flange diameter must be no larger than 6.61” w/.050” x 45° chamfer, Figure 3.

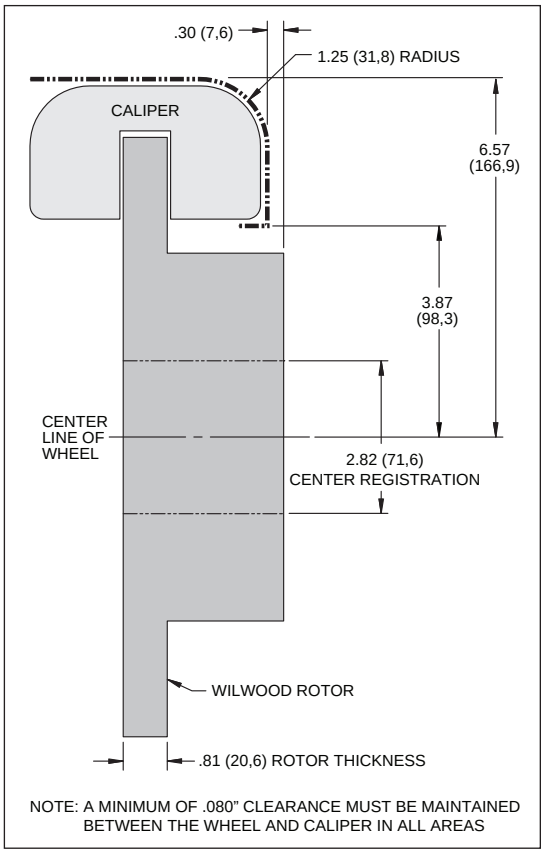

Figure 2. Wheel Clearance Diagram

Disassembly Instructions

Disassembly Instructions:

•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 drum brake assembly down to the bare axle.

Remove studs from Original Equipment Manufacturer (OEM) bearing retainer.

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

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

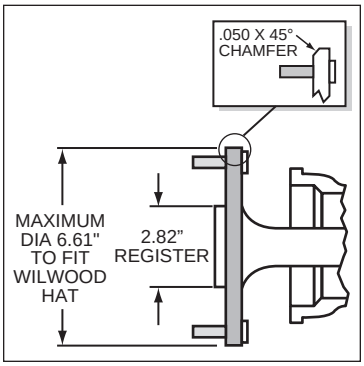

Figure 3. Axle Flange Maximum Dimension

Modifications

Modifications

•The OEM bearing retainer requires minor modification, as shown in Figure 4, before installation of the new Wilwood bracket kit assembly (2).

•Using the parking brake bracket assembly as a template, trim the bearing retainer to clear the shoe adjuster slot/plug on one side and the actuator support bracket on the opposite side. ***NOTE:*** *Take care not to bend the bearing retainer bracket.*

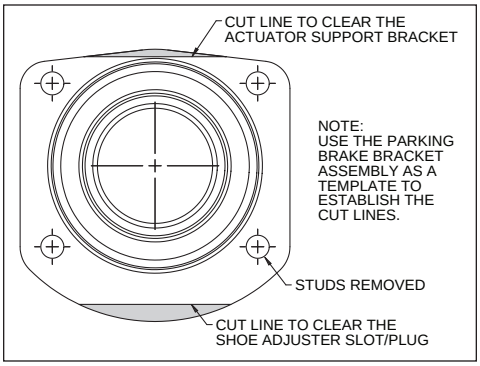

Figure 4. Bearing Retainer Modification

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 (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 5.

•With the bearing retainer in place, slide the caliper mounting bracket assembly (2) onto the axle as shown in Figure 1 and Photo 1. Install axle shim (1) over axle shaft with bearing chamfer facing toward the axle housing, as shown in Photo 2.

Assembly Instructions (Continued)

•Slide the axle and parking brake assembly into the axle housing ensuring that the backing plate is flush with the axle housing flange and the bearing retainer is flush with the backing plate. Secure OEM bearing retainer using bolts (3), washers (4) and lock nuts (5), as shown in Figure 1. Lock nuts (5) and washers (4) that retain the caliper mounting bracket assembly (2) should be on the wheel side of the bracket, Figure 1. Torque nuts to 40 ft-lbs.

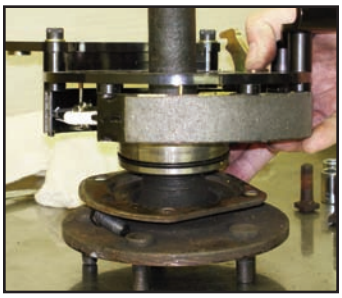

Photo 1

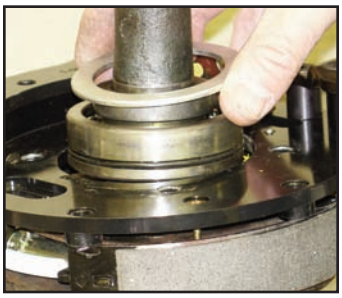

Photo 2

•Slide the rotor registration adapter (6) onto the axle register on the axle flange with the smaller O.D. facing toward the rotor/hat (7), Photo 3. Align the correct hole pattern in the rotor/hat with the stud pattern on the axle flange and slide into place, Figure 1 and Photo 4. ***NOTE:*** *The rotor/hat must fit flush against the axle flange or excessive rotor run out may result.* Install three lug nuts (finger tight) to keep the rotor/hat assembly in place while continuing with the installation. ***NOTE:*** *Some OEM and after market axles come with stud sizes larger than 0.50" diameter. Verify stud size and have a qualified machine shop drill the bolt circle of the hat/rotor to the correct stud size, if necessary.*

Photo 3

Photo 4

•***NOTE:*** *Please reference the caution statement at the beginning of the assembly instructions.* Mount the caliper (8) onto the caliper mounting bracket (2) using bolts (10) and washers (9), as shown in Figure 1. Initially place two .035" thick shims (11) on each bolt between the caliper and the bracket, Photo 5. Temporarily tighten the mounting bolts and view the rotor (7) through the top opening of the caliper. The rotor should be centered in the caliper, Photo 6. 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 5.* If necessary place spare shims between washer (9) 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.

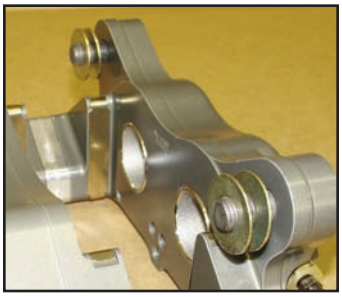

Photo 5

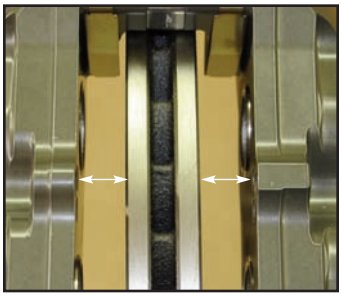

Photo 6

•Install the disc brake pads (12) into the caliper, with the friction material facing the rotor (7), and secure in place using pad clip retainer (13), Photo 7.

•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 custom parking brake cable kit, P/N 330-11985 for the Corvette, and P/N 330-11986 for the Impala 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, install three lug nuts, remove the rubber grommet in the bracket kit assembly (2) and adjust the parking brake shoes outward (using a drum shoe adjustment tool available at your local auto parts store) while spinning the rotor/hat (7) until a slight drag is felt against the hat/drum. Replace the rubber grommet when finished.

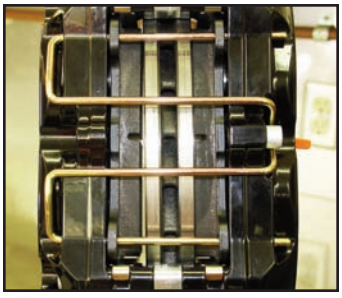

Photo 7

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 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 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.

•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.

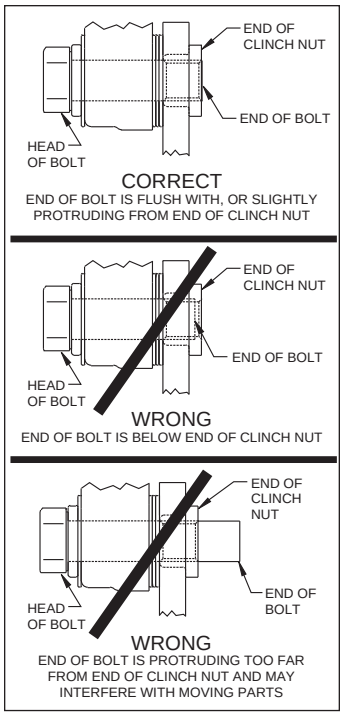

Figure 5. Clinch Nut Engagement Diagram

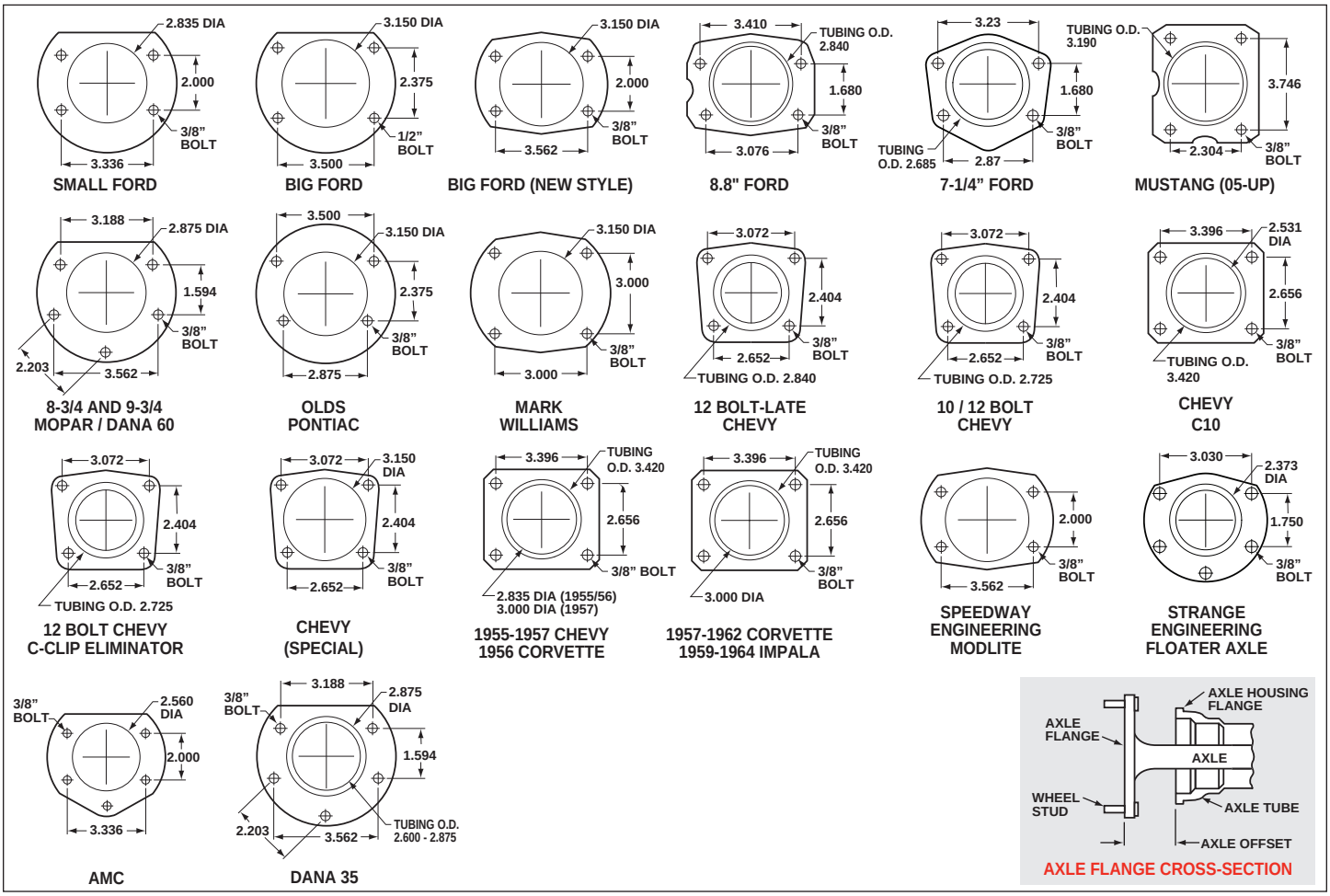

Figure 6. Rear Housing Flange Chart and Axle Flange / Offset Cross-Section

Assembly Instructions (Continued)

- Bleed the brake system, referring to the additional information and recommendations on page 7 for proper bleeding instructions. Check system for leaks after bleeding.

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

Additional Information and Recommendations

•Please read the following concerning 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.

•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 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.

•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 obtains 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

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)
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