ASSEMBLY INSTRUCTIONS

FOR

1990 - 2005 MAZDA MIATA*

***For additional vehicle compatibility, visit www.wilwood.com**

FRONT PROHUB ROADRACE INSTALLATION

BASE PART NUMBER

140-15725

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

Important and highly recommended: Take photos of brake system before disassembly and during the disassembly process. In the event, trouble-shooting photos can be life savers. Many vehicles have undocumented variations, photos will make it much simpler for Wilwood to assist you if you have a problem.

Exploded Assembly Diagram

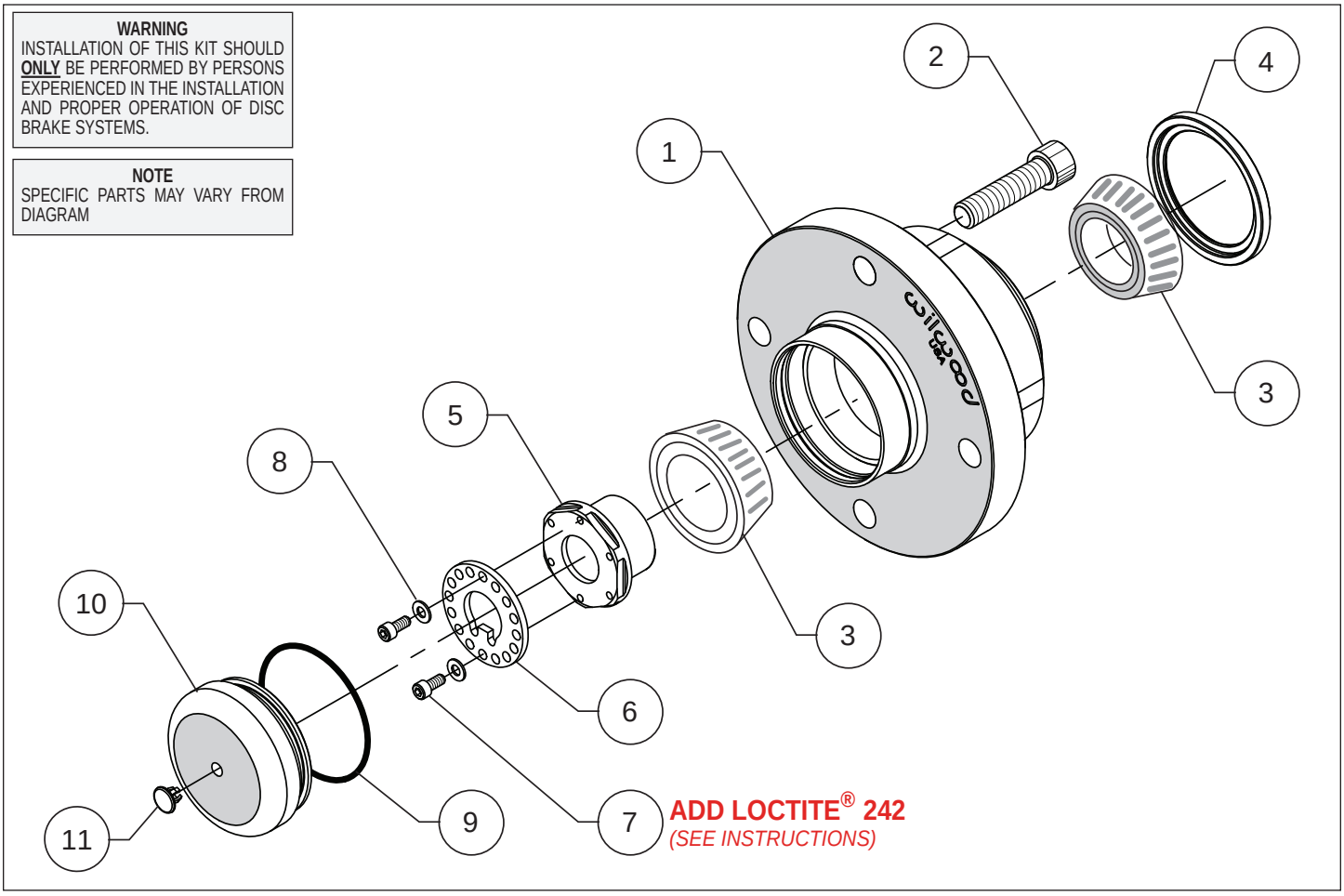

Figure 1. Typical Installation Configuration

Parts List

ITEM NO.	PART NO.	DESCRIPTION	QTY
1	270-15624	ProHub Assembly, 4 x 3.94 Bolt Circle	2
2	230-15632	Stud, M12-1.50 x 50mm Long, Socket Head Cap Screw	8
3	370-15629	Cone, Inner and Outer Bearing	4
4	380-15630	Seal, Grease	2
5	230-15627	Nut, Spindle M20-1.50	2
6	240-16095	Washer, Spindle, 18mm	2
7	230-15681	Bolt, 6-32 x .312 Long, Socket Head Cap Screw	4
8	240-15682	Washer, .156 I.D. x .312 O.D. x .027 Thick	4
9	211-1674	O-Ring	2
10	270-15625	Cap, Dust	2
11	220-15704	Plug, Press-In, Plastic	2

NOTES:
Part Number 230-15631 Bolt Kit, wheel studs, includes part number 230-15632
Part Number 270-15625 Dust Cap Assembly, includes part numbers 211-1674 and 220-15704
Part Number 370-15678 Locknut Kit, includes part numbers 230-15627, 230-15681, 240-16095, 240-15682 and 380-15630

General Information, Disassembly 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 hub kit, double check the following items 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 hub kit is designed for direct bolt-on installation to 1990 through 2005 model year Mazda Miata axle hubs.

- Verify the new hub stud pattern in this kit matches the lug pattern of the vehicles wheels.

Photo 1

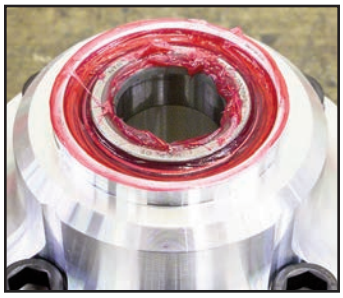

Photo 2

Disassembly Instructions

- Disassemble the original equipment front hubs:

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

  Remove the front wheels and existing hubs.

- Clean and de-grease the spindles.

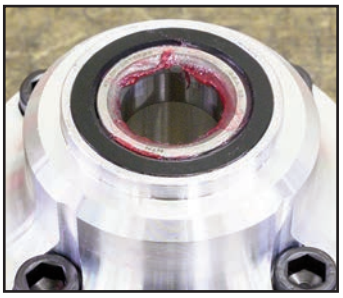

Photo 3

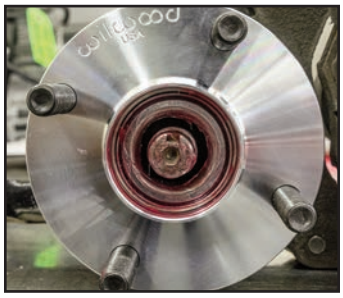

Photo 4

Assembly Instructions (numbers in parenthesis refer to the parts list and Figure 1 on the preceding page):

- Install wheel studs (2) into the hub (1), Photo 1. Torque to 77 ft-lb.

- Pack the inner bearing cone (3) with high temperature disc brake bearing grease (available from your local auto parts store) and install into the backside of the hub (1), Photo 2.

- Install the grease seal (4) with the ridge of the seal facing down, by pressing into the backside of the hub (1), flush with the end of the hub, Photo 3.

- Grease the snout of the spindle and slide the hub assembly onto the spindle, Photo 4. Pack the outer bearing cone (3) with high temperature disc brake bearing grease and install into hub (1). Carefully install the spindle nut (5) into the hub, the backside of the nut will slide inside the diameter of the new bearing, Photo 5. Bearing Adjustment: Torque the nut to 35 ft-lb. while turning the hub by hand. Backoff the nut until loose, turn the hub and tighten nut sufficiently by hand to allow .001" to .003" of hub end play. ***WARNING:** Failure to back off the adjusting nut could cause bearing to run hot and be damaged, which could cause the wheel to lock or come off.*

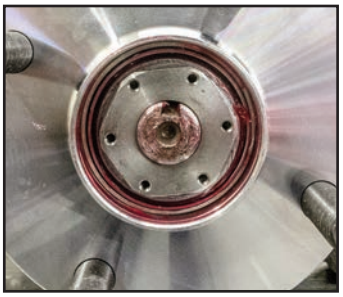

Photo 5

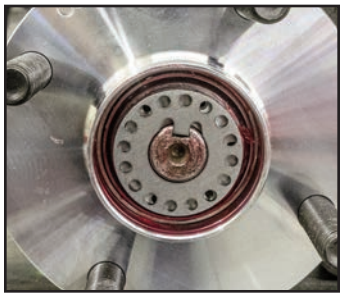

Photo 6

- Install the spindle washer (6), Photo 6. Secure in place with retaining bolts (7) and washers (8) positioned 180° apart, using the holes that best line up to the spindle nut while retaining the correct hub end play as described above, Photo 7. Apply blue *Loctite*® 242 to the threads and torque to **20 in-lb**.

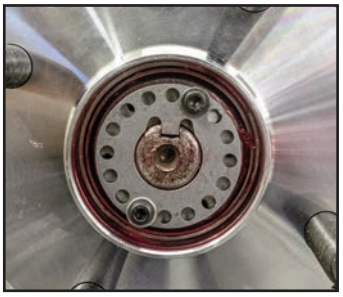

Photo 7

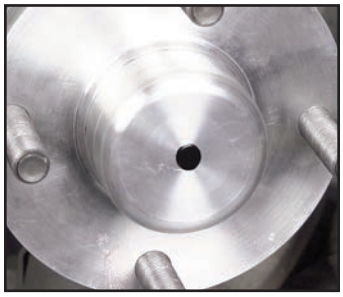

Photo 8

Assembly Instructions (Continued)

•Position the dust cap over the hub and gently tap until cap is seated in place, Photo 8. ***NOTE:*** *The hole in the cap is used with a M6-1.0 bolt (customer supplied) to facilitate the removal of the cap.*

•We recommend removing, inspecting, and repacking the bearing after every 20 hours of track time. Inspect the hub and all components. Replace any suspect components.

Brake Testing

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 and Rotor Bedding

BEDDING STEPS FOR NEW PADS AND ROTORS – ALL COMPOUNDS

Once the brake system has been tested and determined safe to operate the vehicle, follow these steps for the bedding of all new pad materials and rotors. These procedures should only 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.

- Begin with a series of light decelerations to gradually build some heat in the brakes. Use an on-and-off the pedal technique by applying the brakes for 3-5 seconds, and then allow them to fully release for a period roughly twice as long as the deceleration cycle. If you use a 5 count during the deceleration interval, use a 10 count during the release to allow the heat to sink into the pads and rotors.
- After several cycles of light stops to begin warming the brakes, proceed with a series of medium to firm deceleration stops to continue raising the temperature level in the brakes.
- Finish the bedding cycle with a series of 8-10 hard decelerations from 55-65 MPH down to 25 MPH while allowing a proportionate release and heat-sinking interval between each stop. The pads should now be providing positive and consistent response.
- If any amount of brake fade is observed during the bed-in cycle, immediately begin the cool down cycle.
- 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.

Pad and Rotor Bedding (Continued)

COMPETITION VEHICLES

- If your race car is equipped with brake cooling ducts, blocking them will allow the pads and rotors to warm up quicker and speed up the bedding process.
- Temperature indicating paint on the rotor and pad edges can provide valuable data regarding observed temperatures during the bedding process and subsequent on-track sessions. This information can be highly beneficial when evaluating pad compounds and cooling efficiencies.

POST-BEDDING INSPECTION – ALL VEHICLES

- After the bedding cycle, the rotors should exhibit a uniformly burnished finish across the entire contact face. Any surface irregularities that appear as smearing or splotching on the rotor faces can be an indication that the brakes were brought up to temperature too quickly during the bedding cycle. If the smear doesn't blend away after the next run-in cycle, or if chatter under braking results, sanding or resurfacing the rotors will be required to restore a uniform surface for pad contact.

PRE-RACE WARM UP

- Always make every effort to get heat into the brakes prior to each event. Use an on-and-off the pedal practice to warm the brakes during the trip to the staging zone, during parade laps before the flag drops, and every other opportunity in an effort to build heat in the pads and rotors. This will help to ensure best consistency, performance, and durability from your brakes.

DYNO BEDDED COMPETITION PADS AND ROTORS

- Getting track time for a proper pad and rotor bedding session can be difficult. Wilwood offers factory dyno-bedded pads and rotors on many of our popular competition pads and ***Spec 37*** GT series rotors. Dyno-bedded parts are ready to race on their first warm up cycle. This can save valuable time and effort when on-track time is either too valuable or not available at all, Dyno-bedding assures that your pads and rotors have been properly run-in and are ready to go. Contact your dealer or the factory for more information on Wilwood Dyno-Bedding services.

NOTE:

NEVER allow the contact surfaces of the pads or rotors to be contaminated with brake fluid. Always use a catch bottle with a hose to prevent fluid spill during all brake bleeding procedures.

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