



Front Disc Brake Kit Installation Instructions

PLEASE READ FIRST

These instructions are for a variety of EMPI Front disc brake conversion kits. Please read this entire set of instructions before proceeding with the installation. Any instructions that are Safety related are listed in ***Bold Italic*** typeface and must be strictly adhered to. Any exclusive directions pertaining to a particular kit will be called out in **bold** typeface in the steps below,

These step by step instructions should be read before you start to do any work and you should be able to understand them completely. If you do not have the resources to do this installation then have it performed by a qualified mechanic. ***Failure to follow these directions could result in damage to your vehicle or possible bodily injury.***

Your EMPI disc brake kit is designed to be used in combination with drum brakes. If you are going to install 4-Wheel Disc Brakes, a Dual Circuit Master Cylinder will be necessary. EMPI Part # 16-9554, Dual Circuit - 20mm master Cylinder, for all Beetles and Part # 17-2808 for Super Beetles are available at your EMPI dealer.

STEP 1: To start, secure the vehicle on a level, hard surface. Block the rear wheels and set the emergency brake. Loosen the front lug nuts while the front wheels are still on the ground, but do not remove yet.

STEP 2: Elevate the complete front suspension off of the ground and ***use approved jack stands to support the weight of the vehicle. (Do not use the jack only to support the Vehicle.)***

STEP 3: Remove both front wheels.

STEP 4: Remove the front brake drum on the driver's or left side. Making sure you remove the inner wheel bearing and old grease seal.

STEP 5: Loosen and remove the rubber brake hoses from metal brake line at the pan.

STEP 6: To make spindle removal easier remove the 3 bolts that hold the drum brake backing plate to the spindle. Remove the complete backing plate (including brake shoes and wheel cylinder with hose).

STEP 7: For Kits **#22-2850**, **#22-2921**, and **#22-2981**: You must replace your existing spindles with the new spindles furnished in the kit. Your brake caliper will only bolt to this spindle. Also For Kits **#22-2850**, **#22-2921** and **#22-2981** the outer tie ends must be replaced with '69 and later tie rod ends. These can be purchased from your EMPI dealer, Part Number **98-4513** (L/Outer) and **98-4514** (R/Outer). These Kits will only function (caliper to wheel clearance) with 15" or larger wheels.

STEP 8: Install the new wheel bearing races (not included), be careful not to damage the rotor or the races by binding them.) You can purchase new bearings and seals from your EMPI dealer, **Part Number 22-2851**. This a 6 piece set that includes 2 inner bearings, 2 outer bearings and 2 inner seals.

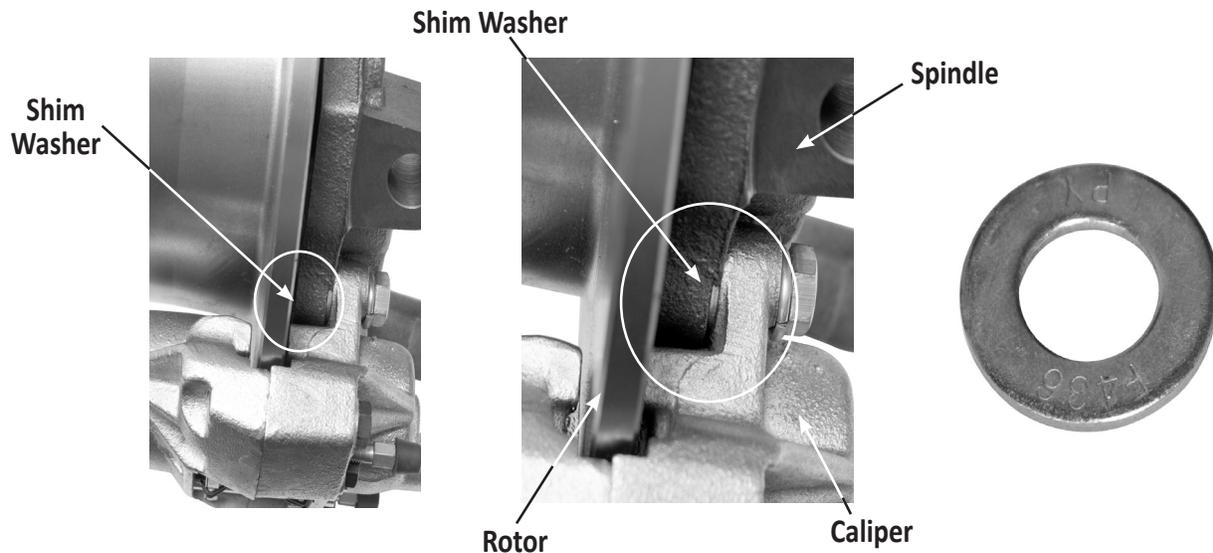
STEP 9: Pack the bearings with suitable hi-temp wheel bearing grease.

STEP 10: Install the greased wheel bearings and the inner seal in the new rotors.

STEP 11: Install new backing plate furnished in this kit, on the new spindle.

STEP 12: Install the new rotor on the new spindle using existing thrust washer and adjuster nut. Adjust to factory specifications. ***(Be careful not to over tighten adjuster nut. This will cause overheating of the bearings, resulting in damage to spindle, bearings and rotor.)*** Install the grease cap, speedometer cable and clip.

STEP 13: Remove the plastic separator from between the brake pads in the caliper and install the caliper onto the bracket. Hardened caliper shim washers are provided to accommodate for the machining variances between the rotor, caliper and spindle. If necessary use the hardened shim washers on the caliper mounting bolts, between the caliper and spindle. There are eight (8) washers supplied in this kit, four (4) are .036 thick, four (4) are .055 thick. If necessary use a combination of washers to achieve the acceptable clearance between rotor and caliper. If shims are used, the same combination must be used on the top and bottom mounting bolts of individual caliper to ensure it is parallel with the rotor. Use a thread locker sealer and torque to 35 ft. lbs.



STEP 14: Install the hose at the caliper first, then attach to the metal brake line at the pan.

STEP 15: You are now ready to repeat this procedure on the passenger side. Once completed you will be ready to bleed the system

STEP 16: To bleed the complete hydraulic system, fill the brake fluid reservoir with fresh dot 3 disc brake fluid.

STEP 17: Start at the master cylinder loosening each metal brake line to bleed air there first, recheck the fluid level.

STEP 18: Bleed the passenger side caliper side caliper first and then driver's side, remembering to not allow the reservoir to run dry!

STEP 19: Do the final system bleed. Start with the passenger side rear then driver side rear. Move to the front and bleed the passenger side front, and finally the driver front. Do the final fill of the brake fluid.

Note

When bleeding 4-Wheel disc Brakes it may be necessary to hold the rear calipers onto the rotor at the 12:00 – O'clock position to completely evacuate the system of air before install then onto the caliper brackets. All calipers must be bled properly regardless of the kit purchased.

STEP 20: Rinse any spilled brake fluid off with water (brake fluid is water-soluble), be careful not to let brake fluid get on any painted surfaces.

STEP 21: Re-install the front tires and wheels, remove from the jack stands and lower the vehicle to the ground. Give the lug nuts a final tightening & torque to specification.

When test driving, be sure to make a few slow short stops first, to familiarize yourself with the vehicles new braking power and making sure that everything is functioning properly.

Note

For Kit # 22-2850, 22-2981 and 22-2981 - Since Spindles and Tie Rods have been changed the front end geometry has also changed. A front end alignment will also need to be performed.