Installation Instructions for EMPI Rear Disc Brake Kit

Please Read First

These instructions are for a variety of rear 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.
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 front wheels and release the emergency brake, loosen the axle nuts and rear lug nuts while the rear wheels are still on the ground, but do not remove yet.

STEP 2: Elevate the complete rear 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 rear wheels.

STEP 4: Remove the rear axle nut and brake drum. Remove brake shoes and all related components from backing plate. Remove the 8 mm bolt that secures the emergency brake cable to the backing plate, then disconnect steel brake line from the wheel cylinder. Remove the bearing seal cap. Backing plate can now be removed.

DO NOT DISCARD ANY PARTS until the installation is complete as the axle nuts, bearing caps etc. must be re-used.

Swing Axle Applications:

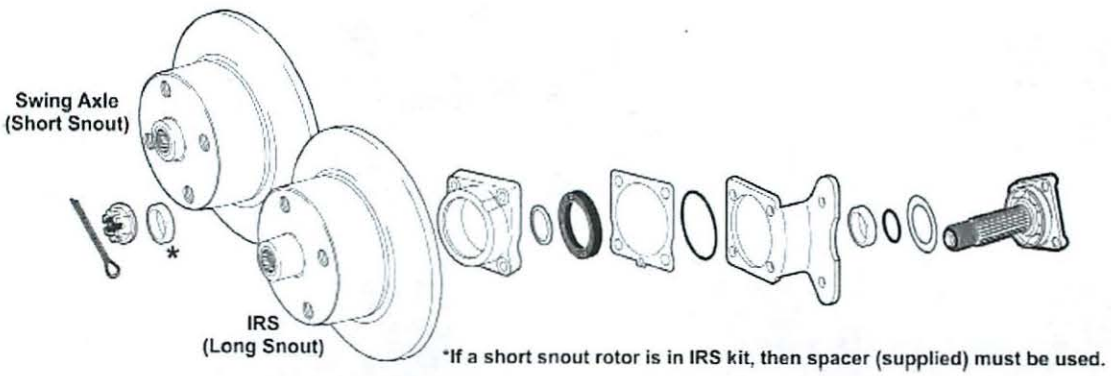
Qty.	Description
2	Rear Axle Seal Kit
2	Disc Brake Rotors
2	Caliper Brackets
1	Left Caliper
1	Right Caliper
2	Flexible Brake Hoses
4	10mm x 25mm Hex Bolts with Washers
2	*C-Clips for Parking Brake Cables
2	*Parking Brake Cables

*Specified Kits

I.R.S. Applications:

Qty.	Description
2	Rear Axle Seal Kit
2	Disc Brake Rotors
2	Caliper Brackets
1	Left Caliper
1	Right Caliper
2	Flexible Brake Hoses
4	10mm x 25mm Hex Bolts with Washers
2	*C-Clips for Parking Brake Cables
2	*Parking Brake Cables

*Specified Kits



*If a short snout rotor is in IRS kit, then spacer (supplied) must be used.

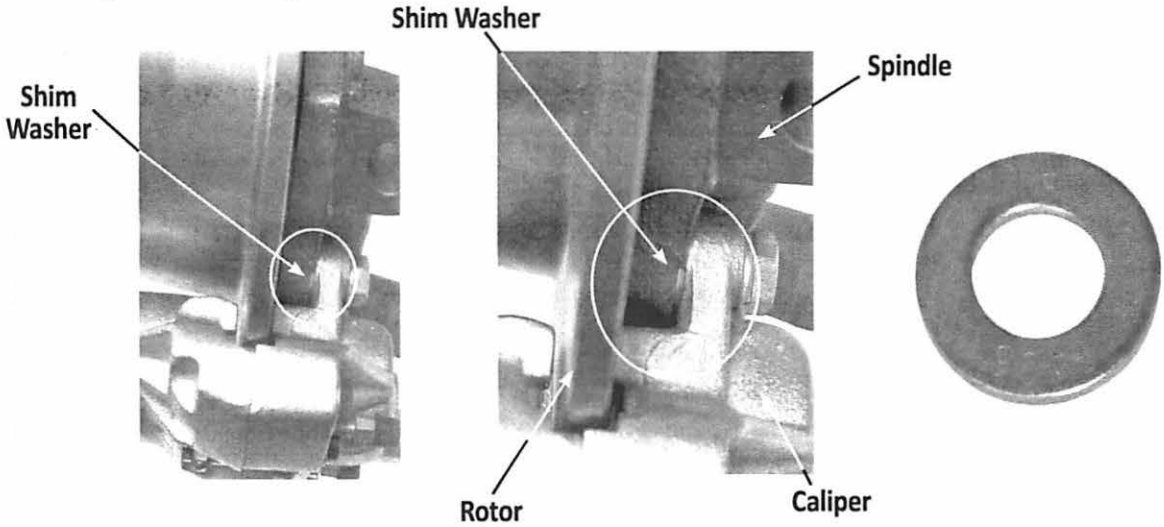
STEP 5: (See parts break down illustration) Install the bearing thrust washer, small o-ring, and original spacer on axle (Small o-ring not required on I.R.S.). Install the caliper bracket and large o-ring on the bearing flange. Install the bearing seal cap with new seal and oil deflector. Using only 1 gasket between bearing cap and caliper bracket. Torque the bearing seal cap bolts to 25 ft. lbs.

Note: If vehicle is equipped with early (pre 1960) bearing seal cap the brake rotor will not seat properly. The later version bearing seal cap must be used.

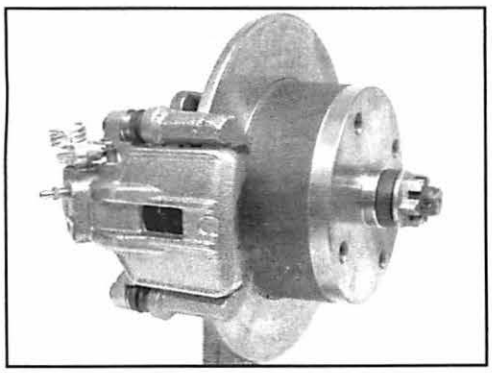
Step 6: Install the disc brake rotor and tighten the axle nut.

Note: Axle nuts must be re-tightened and torque to at least 250 ft. lbs. after installation is complete and vehicle is on the ground.

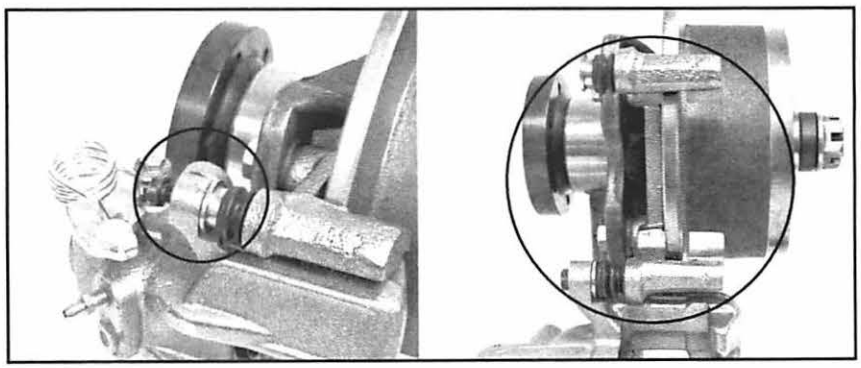
Step 7: Install the caliper, (make sure the bleeder screw is on the top, as there is a left, and right side) with the 10mm bolts and washer supplied in kit. Hardened caliper shim washers are provided to acommodate for the machining variances between the rotor, caliper and spindle, If necessary, use the 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 acheive 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. Re-attach the brake line, the original brake lines can be used, but must be re-shaped (use a hand held bending tool to avoid crimping the line). Install the flexible brake hose supplied, starting at the caliper (see figure 6). Next install your re-shaped metal brake line to the flexible hose. Make any final bends in the metal brake line to acheive adequate clearance between any moving objects. When installing this kit, it is recommended that a thread-locker be applied to caliper hardware. torque to 25 ft. lbs.



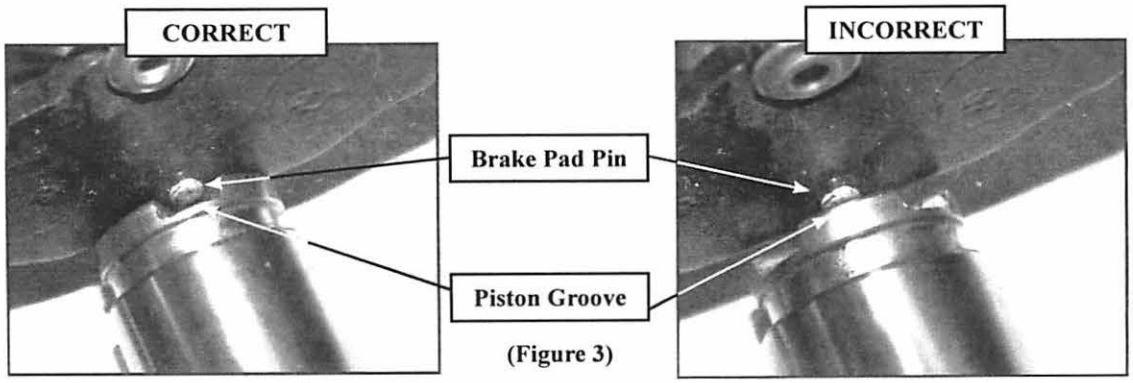
Step 8: To Install the disc brake pads into the caliper start by loosening both the top and bottom bolts that hold the caliper to the guide pins that are covered by the rubber boots. Do not remove the bottom bolt, this bolt only needs to be loosened 1 or 2 turns. (See Figure 1) Remove the top bolt completely and rotate the caliper open, this will gain you access to the rotor and bracket and allow you to install the brake pads. (See Figure 2) when installing the brake pads, you must 'clock ' the caliper piston so that one of the grooves align with the pin on the brake pad. The pin must be located in one of the piston grooves for the pad to install properly (flat against the piston) and to fit properly over the rotor. (See Figure 3) With the brake pads in place, you can close the caliper, the tension springs on the pads will push against the inside top of the caliper and provide some resistance, this is normal. (See figure 4) Re install the top bolt and tighten top and bottom bolts completely. When re installing the top bolt be sure that the flat portion of the nut for the pin with the boot on it is aligned with the flat recess on the caliper (See Figure 5) Your pads are now installed and you are ready to continue with your installation.



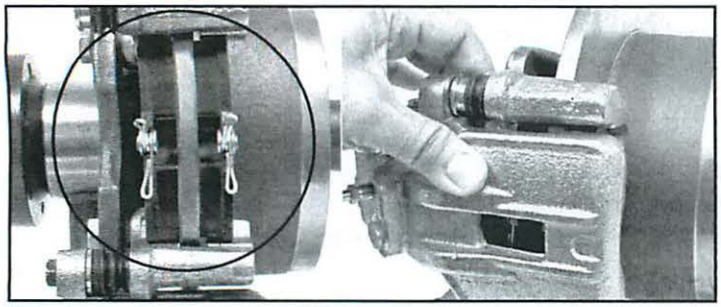
(Figure 1)



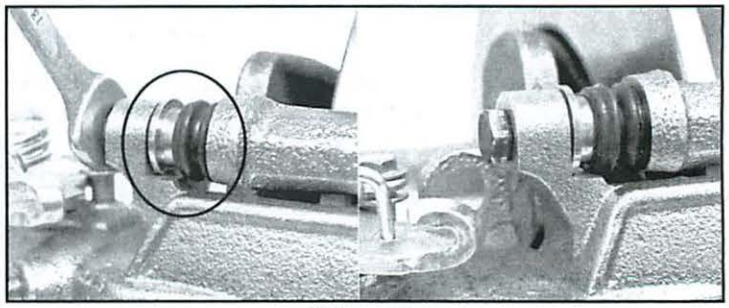
(Figure 2)



(Figure 3)

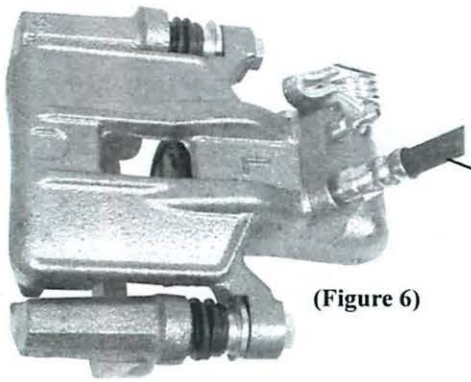


(Figure 4)



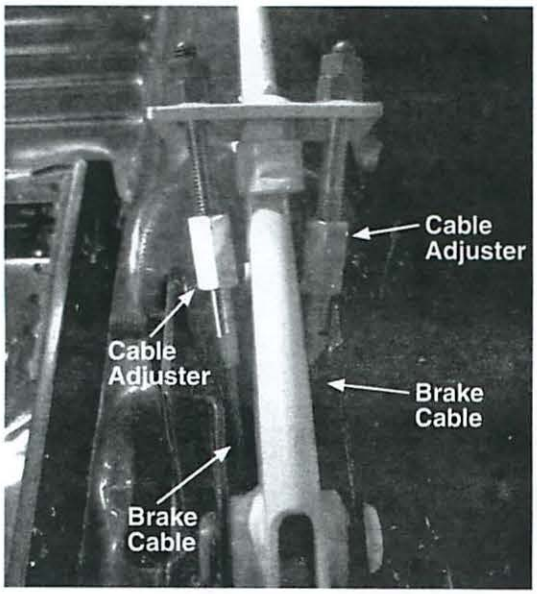
(Figure 5)

Step 9: For kits with parking brakes, remove the existing parking brake cables and install new cables. Secure cable at the caliper with 'C' clips provided, install the cable end to the parking brake lever on the caliper. (Refer to a workshop manual for adjustment). Should the cables require shortening for your application, install the cable adjuster to the brake handle mount pad loosely with nuts tightened about 1/3 of the thread distance. Pull cable to installation point with pressure, mark and cut. Install the cable to the adjuster and secure with the set screw. Repeat for the opposite side (once installed) and adjust both sides evenly. (See Figure 7)



(Figure 6)

Thread these hoses into the caliper and then steel lines to the female end.



(Figure 7)

STEP 10: You are now ready to repeat this procedure on the passenger side. Once completed you will be ready to bleed the system

STEP 11: To bleed the complete hydraulic system fill the brake fluid reservoir with fresh dot 3 disc brake fluid .

STEP 12: Start at the master cylinder loosening each metal brake line to bleed air there first - recheck the fluid level.

STEP 13: 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 installing them onto the Caliper Brackets. ***All Calipers must be bled properly regardless of the kit purchased.***

Step 14: 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 15: Re-install the rear tires and wheels, remove the jack stands and lower the vehicle to the ground. Give the lug nuts a final tightening and torque the axle nut 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.