



Caliper Removal

1. Remove the brake line from the caliper. Place a large container suitable for brake fluid under the disconnected brake line(s) to contain any expelled fluid during brake service. Make sure to read, understand and follow all guidelines for handling and disposing of used brake fluid.
2. Remove the caliper assembly from the anchor plate by first removing the key retention bolt and tapping out the key and support spring.
3. Clean the V-way surfaces of the anchor plate with a brass wire brush. Carefully inspect these surfaces for any excessive wear, nicks or gouges. If any raised material is present that may limit caliper movement, lightly file the area making sure to remove only the raised area and not any base material.
4. Tag the caliper core with proper part number and/or place in box of the proper replacement caliper.
5. Inspect the anchor plate axle flange bolt circle. Note that all bolts securing the anchor plate to the axle are in place and properly torqued.
6. Thoroughly clean and carefully inspect the spring, key and retention bolt for any nicks, gouges, burrs or other signs of excessive wear or damage. Although these components can be reused if they are not excessively worn or damaged, **it is recommended that these components be replaced at each service with application specific, new hardware.**
7. Place a large container suitable for brake fluid under the disconnected brake line, carefully extract the majority the old brake fluid from the reservoir (with a syringe or appropriate tool) then fill it with new fluid of the proper DOT rating. **Taking care not to allow the reservoir to fully run out of clean brake fluid**, manually activate the brakes until the majority of the fluid has expelled from

the system. Reattach the brake line to the replacement caliper, fill the brake reservoir with new fluid and bleed the brakes. Be sure to use the bleeder screw provided with the replacement caliper to ensure a proper seal to the new tube seat installed in the caliper. Refill the reservoir and properly install the reservoir cover.

Caliper Installation

Note: Before installing the replacement caliper permanently, check for "bumper" gap (wear between the support rails and the caliper.) Failure to do so can result in brake noise, leaking at the pistons, premature component wear and overall poor braking performance. Use the following procedure:

1. Install the caliper in the anchor plate. Temporarily install the key **without installing the support spring**. Secure the key to the anchor using the retention bolt.
2. Insert a suitable prying tool between the caliper and the center of the support key, making sure that the tool is equal distance from each edge of the caliper. Pry firmly to ensure that the caliper is seated against the three sliding surfaces (A, B & C) illustrated.
3. Measure the "bumper" gap formed between the caliper and the support key using a feeler gauge or stack of feeler gauges. **Measure on both sides of the prying tool. If the measurements differ, use the larger figure.**
4. Select the correct shim from the kit as shown in the chart below:

Shim Kit H8203

Measured Bumper Gap	Shim Size Required
.000" to .058"	No Shim
.059" to .101"	.025" Shim
.102" to .145"	.045" Shim
.146"+	See Note

NOTE: *If the measured gap exceeds the maximum dimension shown, it will be necessary to replace the anchor plate. Replace the anchor plate and remeasure with the replacement caliper to determine which, if any, shim to use.*

5. Remove the retention bolt, key and caliper from the anchor plate. Lubricate the V-way surfaces of the caliper, anchor plate, spring and key with a silicone based grease recommended for disc brake service.
6. A.) If a shim is necessary, install it on the anchor plate mounting surface opposite the key side. Reinstall the replacement caliper with the key and spring. It is recommended that a new key and spring are used.

B.) If no shim is necessary, reinstall the replacement caliper using the appropriate key and new spring. It is recommended that a new key and spring are used. Tighten the retention bolt to the proper torque.
7. Reattach the brake line to the caliper. Fill the brake system with the new, clean brake fluid of the proper DOT rating number. Bleed the brakes, following the manufacturer's recommended procedure. Be sure to use the bleeder screw provided with the replacement caliper to ensure a proper seal to the new tube seat installed in the caliper.
8. Test the brake system for proper operation and stopping performance.

As part of complete brake system diagnostics, all mating components should be verified as meeting manufacturer's specifications. During Caliper R&R, the rotor is one of the most important components to inspect.

Basic Rotor Inspection

1. Using a micrometer, measure the thickness of the rotor in four equally spaced areas around the rotor. Compare the findings with the manufacturer's Thickness Variation specifications. If the rotor is within specifications as well as having enough material to last through the next reline; then plan on reusing the rotor. Excessive thickness variation may result in increased brake wear, increased brake temperature as well as pedal pulsing and / or steering vibration.
2. Using a dial indicator, measure the total run out of the rotor at the center of the pad wear area. This run out may not exceed 0.012" TIR. Excessive run out may result in increased brake wear, increased brake temperature, pedal pulsing and/or steering vibration.
3. Using a dial indicator, check the hub run out and wheel bearing free play. Consult the vehicle manufacturer's service manual for specifications.
4. Inspect all lines and hoses for leaks, abrasions, cuts, or any wear. If found, the hose or lines must be replaced. Have an assistant apply and hold the brakes while you inspect the hydraulic system for leaks.

Additional Hydraulic Brake Maintenance Guidelines are available from the Technology & Maintenance Council (TMC) of the American Trucking Association.