

# Toyota Rear Disc Brake Service

How long should a brake job last? You've probably heard this question asked more than once by your customers. The usual answer is that it depends a lot on the way that the car is driven and the types of roads that it's driven on. It might help to remember that *how* you do the job to begin with can also have a big effect on the mileage your customers get out of their brakes. It's that extra attention to the details that separates your work from "the other guys."

The proper operation of the parking brake mechanism is of great importance on this rear disc system. The parking brake has the dual responsibility of adjusting the rear brakes as they wear and also locking the rear brakes when parking.

The parking brake may not receive regular use which may lead to a low brake pedal. A binding cable or other parts in the parking brake mechanism will cause unnecessary rear pad wear. A properly adjusted parking brake cable should require from five to eight clicks to fully lock the rear brakes.

Probably the best way to do a quality brake job is to establish your own procedure and then stick with it every time that you do the job. You're less likely to overlook anything with this method. We will give you a step-by-step procedure for pad replacement first. The second section will cover caliper overhaul.

Photos for this article were of a 1981 Celica Supra.

—By Karl Seyfert



# 1

Take a good look at the calipers and rotors before you start to take anything apart. Any sign of fluid leakage? Standard rotor thickness is 10.0 mm (0.39 in) and replacement thickness is 9.0 mm (0.35 in). There isn't much meat on these rotors for resurfacing so measure carefully before quoting the job.



# 2

Check the operation of the hand brake carefully. Try applying the lever by hand to make sure there's no binding and that it releases completely. Inspect the entire cable for proper operation. Torn protective boots will let water enter the cable. A binding cable will ruin your work in a hurry.





# 3

These spring clips hold the whole show together. If they look weak or badly bent out of shape, replace them. Take out all four clips and then drive out the two steel wedges that hold the calipers in position. Use a wire wheel to polish off any corrosion on the wedges. Remove the caliper frames.



# 4

You don't have to wait until a caliper starts to leak before recommending an overhaul. If the dust boot or any of the other rubber parts is torn, dried out, or just generally tired looking; trouble isn't too far behind. Check for smooth operation of the parking brake mechanism also.



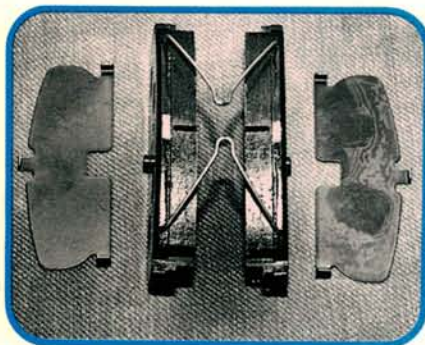
# 5

Turn the caliper piston clockwise to retract it into the caliper. We used the Toyota service tool to engage the slots in the piston. A pair of needle nosed pliers will also work. Resist the temptation to grab the piston with channel locks. It can be tough to push, turn, and hold all at the same time.



# 6

This is one of those little things that's so often overlooked. Take all of the hardware off the caliper frame and clean all of the rubbing surfaces with a wire brush or file. If new pads are installed on rusty frames, you can almost bet that they're going to wear crooked.



# 7

Here's a shot of all the pad hardware and a new set of pads. The anti-squeal shims may have rusted away and disappeared by the time you get to work on the car. That doesn't mean that the car doesn't need them! The minimum thickness on used pads is 1.0 mm (0.04 in). Replace if worn unevenly.



# 8

These rotors can get stuck to the axles. Before you break out your favorite persuader, try threading two bolts evenly into these holes. Put some anti-seize compound on the bolts first. If the bolts bottom and the rotor still hasn't popped loose, tap the rotor lightly with a soft-faced hammer.



**9**

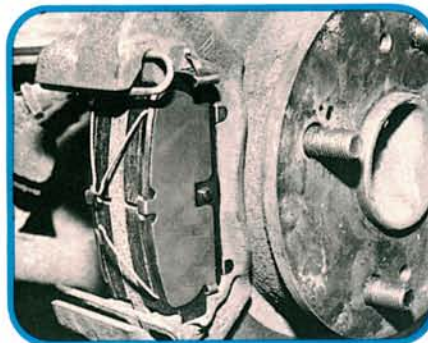
Make sure that the area of the axle that the rotor mates to is clean and smooth. Clean up the corresponding area on the inside of the rotor before putting it on the lathe. A disc sander works well here. Put a small amount of anti-seize compound on the mating surfaces before reinstallation.

**10**

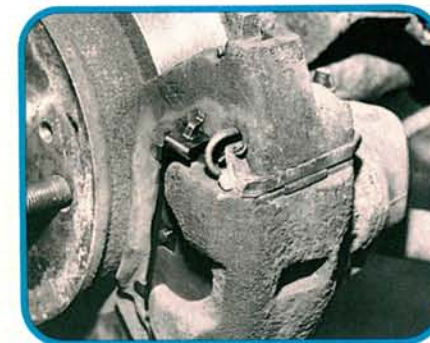
Notice the location of the pad anti-rattle springs in this photo. The upper clip has a spring ear on it that pushes down on the pad to prevent pad clunk when the brakes are applied. The lower clip is plain. Apply a small amount of brake lube to the ends of the new pads before installing them.

**11**

The rear brake pads have a small protrusion on their backing plates. The caliper piston notches must be in the 9 and 3 o'clock position to properly engage the pad. A little silicone spray on the piston dust boot will keep it from hanging up on the piston as you index it.

**12**

All new hardware was used on this job. Weather is hard on these parts here in Ohio. Don't take a chance if your hardware looks iffy. The pad support springs shown mounted to the pads prevent rattles and clunks. Some guys like to lube the anti-squeal shims before installing the caliper. It's up to you.

**13**

Install both metal plates over the caliper. Then slide the caliper over the pads. Apply anti-seize to a wedge and then slide it between the caliper and the caliper frame. Use a small pry bar to move the caliper enough to repeat the process on the lower wedge. Center the wedges and reinstall the clips.

**14**

Here's where a lot of good guys go bad. Everyone knows that you aren't supposed to over-torque lug nuts but we all keep using those impacts. The rotors can get pulled out of true and on this car you might end up damaging the alloy wheels as well. Consult the manual for appropriate torque specs.



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## Binder Basics

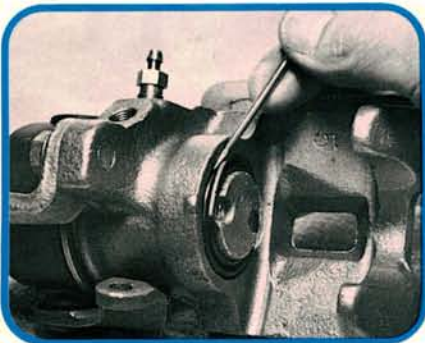
This style caliper was used on the 1979 to 1981 Celica Supras. There isn't a direct interchange with other Toyota models with rear discs built during these years. You may find some similarities in their construction, however. This is an expensive caliper to replace as an assembly. If you're thinking about doing a caliper overhaul, it's a good idea to follow a few simple steps to avoid misunderstandings.

- Explain the repair or replacement option to your customer.
- Get his authorization to disassemble the caliper completely for inspection.
- Agree on a fee for teardown. If repairs are declined, the teardown fee must be paid. Apply the fee to the

bill if accepted.

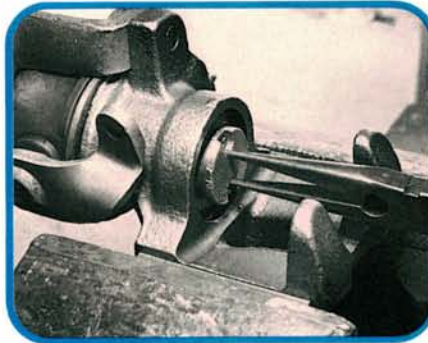
- Make a careful inspection of the disassembled caliper.
- Provide the customer with a list of the needed parts for overhaul and your labor charge.
- Compare the total cost for an overhaul to the price for a new or rebuilt caliper.
- Let the customer decide which option he prefers. This should eliminate many embarrassing second phone calls.

I checked with the local Toyota dealer on the availability of internal parts for this caliper. All parts are available but many must be ordered individually. The seal kit does not include a new boot cover, for example. A master overhaul kit is not offered.



# 15

Remove the caliper from the car and clean it thoroughly before beginning disassembly. Check the exterior of the caliper for any obvious damage before proceeding. Remove the set ring, then pull the cylinder dust boot out of its groove. Inspect for fluid leakage or corrosion in this area.



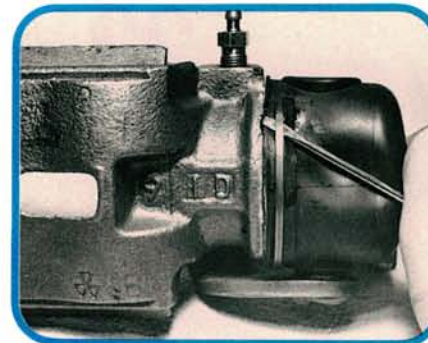
# 16

Turn the piston counterclockwise to remove it. Use the factory tool or pliers shown here. Remove the piston seal and inspect the caliper bore carefully for roughness or scoring. Remove the bleeder screw and make sure its passage is open. Clean the caliper bore with brake fluid.



# 17

Somebody already got to this piston with the channel locks. If the caliper was a leaker, check the surface of the piston carefully for any roughness or pitting of the plating. Internal parts can be expensive and you might consider a new or rebuilt caliper if the piston is trashed.



# 18

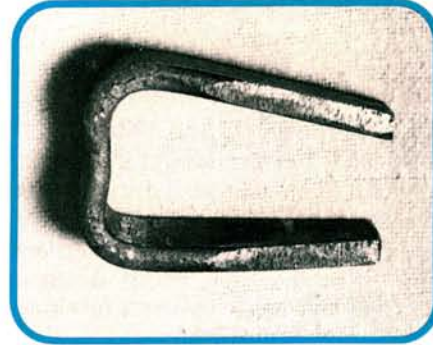
Remove the retaining ring for the parking brake boot cover. The ring can't come off past the parking brake crank, so move it down over the caliper for now. Turn the boot cover inside out and move it over to the side. Clean the grease off of the boot and parking brake mechanism. Check the boot for holes.





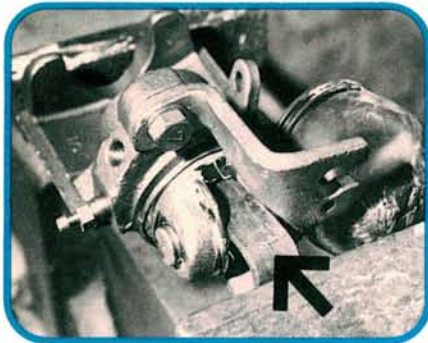
# 19

With the boot cover out of the way, inspect the parking brake assembly for water damage. Any brake fluid leakage from the adjusting bolt o-ring would show up back here too. Clean the old grease off of the mechanism. There should be a small roll pin installed next to the torsion spring.



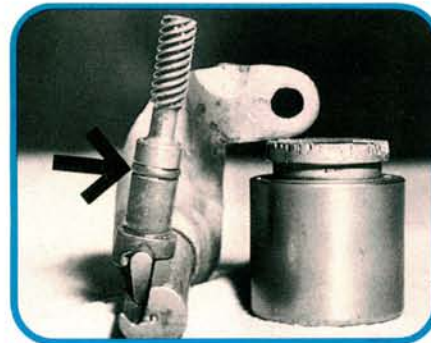
# 20

The factory manual specifies the use of a special tool and a press when disassembling the parking brake mechanism. I didn't have either so I made something up. It's not pretty but it worked. A stack of spring washers must be compressed so that the parking brake crank can be removed.



# 21

Remove the parking brake crank snap ring. The tool must straddle the parking brake and push down on the stack of spring washers below it. There isn't much pressure involved here but you may have trouble getting the tool positioned right. Catch the small part called the strut as the crank is removed.



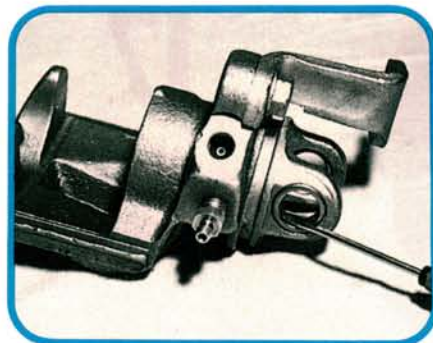
# 22

We've laid out the three main parking brake parts as they fit together on the caliper. Cover the threads of the adjusting bolt with cellophane tape before replacing the o-ring seal. Some calipers may have a backup ring behind the o-ring. The number of spring washers used may vary.



# 23

Before reassembling the caliper, examine all internal parts carefully for any damage, wear, or corrosion. The spring washers must be installed on the adjusting bolt with their faces in an alternating convex, concave order. Start with a convex face against the adjusting bolt.



# 24

Inspect the parking brake needle bearings for damage. They are a serviceable part and can be driven out with the correct size drift. Properly support the caliper when driving the bearings to avoid bending the caliper casting. Lube the bearings before reassembly.