

Honda Front Disc Brake Service

This Honda Civic has one of the simplest front disc brake setups you'll ever see. It doesn't have pistons you have to screw in and there are no built-in hand brake mechanisms to stick or bind. This is your basic, entry-level, single piston floating caliper. Unlike the earlier, slide-hammer-and-sweat Civic, this car has pop-off rotors. No more violent drive hub removal and resulting bearing destruction. (Before you think we're getting lazy on you, please note that we will devote an entire article to the subject of shim selection and bearing replacement on cars with two-piece bearings in the November issue of *Import Service*. We'll include the old style Honda at that time.)

In the meantime, there are a few tricks and things to consider when attacking one of these, especially when you're tracking down brake shudder, vibration, or noise. We'll point them out as we go along. Even a simple brake job isn't simple when it refuses to cooperate.

Also remember that this Civic is equipped with a

low brake fluid sensor in the master cylinder. If the fluid is low enough to turn on the dashboard warning light, it may simply be caused by pad wear. In any event, it's always wise to alert the customer, and convince him that a thorough brake inspection is due.

If you stroke bleed the brakes to bleed them, please avoid rapidly pushing the pedal to the floor. You may damage the master cylinder. Even seals that are working well in their normal range of travel can be cut and damaged when asked to enter parts of the cylinder bore not normally kept clean by seal travel. Limit overall pedal stroke to about two inches. Bleed until clean fluid flows from the bleeders. That way you're sure you've flushed out any contaminated fluid and dirt.

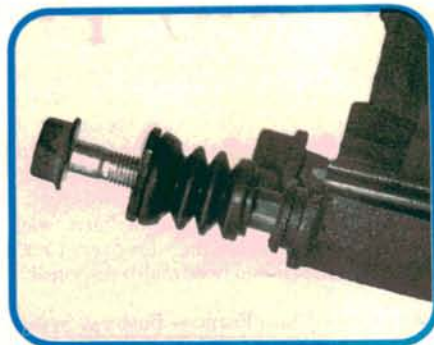
Finally, please take the time to thoroughly inspect, refinish, or if necessary, replace those rotors. Just throwing in a set of pads doesn't get it. Your customer will complain of increased pedal effort, longer stopping distances, and a longer break-in period (if the pads ever do seat against the old rotor faces).

—By Ralph Birnbaum



1

You'll want to isolate the cause of brake shudder before you do the brake job. On your test drive, use the hand brake to stop the car from different speeds. If brake shudder or pulsation goes away, the front brakes are the problem. If it's still there, you'll have to include a probable rear drum out-of-round condition to your list of problems.



2

These are the bolt/slide pin set-ups that hold the Honda caliper to the caliper frame. The slide pins fit into bores on the caliper frame. The rubber boots snap into grooves on the slide pins on one side, and onto those bore collars on the other. Broken boots mean corrosion and stuck slide pins.

**3**

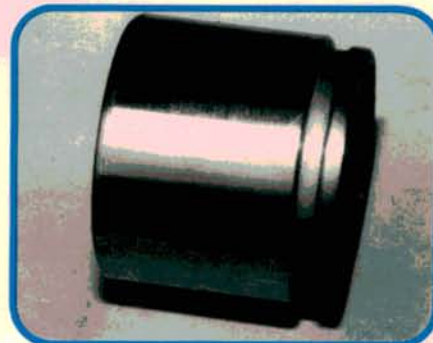
Don't just remove the attaching bolts from the slide pins and stop there when removing the caliper. This photo shows a clean slide pin at right with its protective seal intact, and a pin so badly corroded from a torn boot that we had to remove it with locking pliers, heat, and penetrating oil.

**4**

If the slide pins are that badly corroded, you can bet the pin bores in the caliper frame are just as bad. You'll need to use a spiral wire brush and penetrating oil to clean them out. The pins must slide freely in these bores or the caliper will stick and bind, giving you poor braking and uneven pad wear.

**5**

Remove the caliper and inspect the protective boot. This one was torn, so we popped the caliper piston with compressed air. Remove the piston seal and boot and thoroughly clean both grooves in the caliper. A little time cleaning now will ease reassembly and ensure a good, tight seal.

**6**

Carefully inspect the brake piston. This one cleaned up with a fine wire wheel. Inspect the outer surface of the piston for any pits, or scoring of the polished surface. Don't be afraid to scrap any suspect pistons, especially for longitudinal scoring where the piston rides on the seal.

**7**

Install the piston seal in the caliper and lube it. Now lube the protective boot and slide it over the piston, letting it hang slightly over the end of the piston as shown. The boot will be held in place by the sealing groove in the caliper on the outside, and the piston on the inside.

**8**

Start the lip of the piston boot into its groove in the caliper housing. Twist the piston/boot slightly to get as much of the lip as possible started, especially where it rides in the "blind" or closed end of the housing. Don't push the piston all the way in just yet.

**9**

That boot must be fully seated before we push the piston all the way in. Use something pointed but blunt to coax that last little bit of boot sealing lip into its groove. We used a pencil with the lead broken off. (High technology, eh?) Make sure you don't use anything sharp enough to cut the rubber.

**10**

Now you can take a large C-clamp and slowly crank the piston in. You might get by with large adjustable pliers, but you'll have more of a tendency to cock the piston in the bore. The C-clamp will keep the piston square in the bore and ease installation.

**11**

This banjo bolt holds the fluid line to the caliper housing. Check the seating surface on the caliper casting and the sealing face of the bolt itself for any build-up of rust that might nick the sealing washers. Also check the hose contact faces. It's always a good bet to replace the sealing washers.

**12**

Take the time to check this mounting bracket that holds the flex hose to the front strut for any serious corrosion build up that may actually be pinching the hose enough to turn it into a one-way valve. It could trap return pressure when the brakes are released, making the brake drag.

**13**

Check rotor thickness and compare to minimum thickness specifications. Don't just check in one spot. Check at eight equally spaced spots around the rotor in case thickness varies enough to cause pulsation. Make sure there's enough metal left to bring the faces back to parallel by machining or grinding.

**14**

It's also a good idea to check the rotors for run out using a dial indicator. Again, we want to be sure there's enough metal left to eliminate any run out condition without having to remove so much metal that we leave the rotor thinner than minimum allowable specifications.

**15**

We recommend that rotor resurfacing become a standard part of every disc job. An on-the-car rotor grinder like this one from Brake Specialties bolts on in place of the caliper frame and the turning motion of two abrasive discs gives a nondirectional finish to the rotors.

**16**

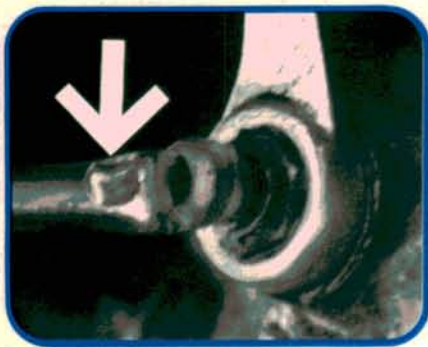
If the caliper frame mounting bolt threads are as badly rusted and corroded as this one, take the time to wire brush the threads. That rust in the threads will roll loose when you bolt things back together and act like a reamer in the threaded holes in the knuckle.

**17**

This shiny spot on the caliper spring clip means that it's been doing its job. When you replace the caliper housing on the caliper frame after installing the pads in the frame, you ought to be able to feel the tension of those clips against the housing. These clips can lose their tension over time.

**18**

The caliper slide pins have flats ground on their heads. This one is not properly indexed yet. When properly positioned, it will fit snugly against the ear of the caliper housing against a matching flat. This will keep the pin from turning when you bolt the slide pins to the housing.

**19**

Power bleeding can leave a small amount of air trapped behind the piston. If you power bleed these brakes, be sure you depress the brake pedal several times (limiting pedal stroke to about two inches to avoid damaging the master cylinder) and then rebleed the system before your test drive.

**20**

This is not the proper tool for tightening lug nuts. Too many brake jobs that were done properly up to this point have been ruined when somebody didn't take the time to properly torque lug nuts. Don't create a problem to replace the one you've just corrected.