Raybestos Bulletin 18-01

Checking Caliper Piston Operation

Date: 01-19-18

Vehicles Involved: All with Disc Brakes

Condition: Caliper Piston Won't Retract Into Its Housing

Many technicians determine if a caliper piston is operating correctly by pushing the piston into its housing. If the piston pushes in easily, they figure the caliper piston is working fine. This is not always the case.

To determine if a caliper piston is operating correctly, you must ensure that the square cut seal is working. The square cut seal is what allows the caliper piston to retract back into its housing. Just because you can manually push the piston in, doesn't mean the square cut seal is working.

Rapid brake pad wear, brake drag or brake pull are key indicators that the square cut seal is compromised. A broken or defective square cut seal results in a piston that is not able to retract back into its housing. This means the brake pads will maintain contact with the rotor, even when the brake pedal isn't engaged.

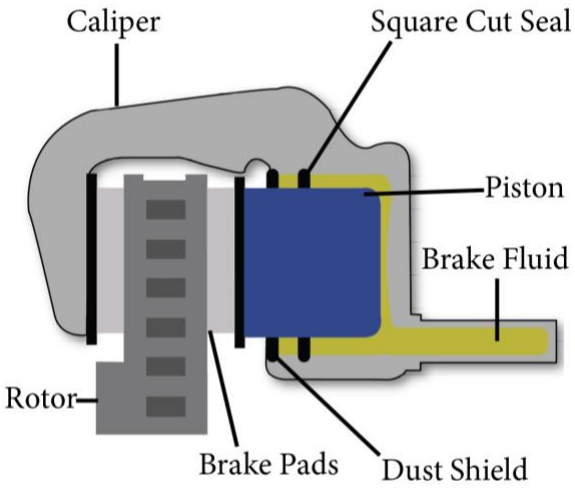
Repair Procedure:

To determine if the square cut seal is working, you must inspect the operation of the caliper piston. There are two methods you can use to check this. Both methods require the help of an assistant.

Manually Checking a Caliper Piston

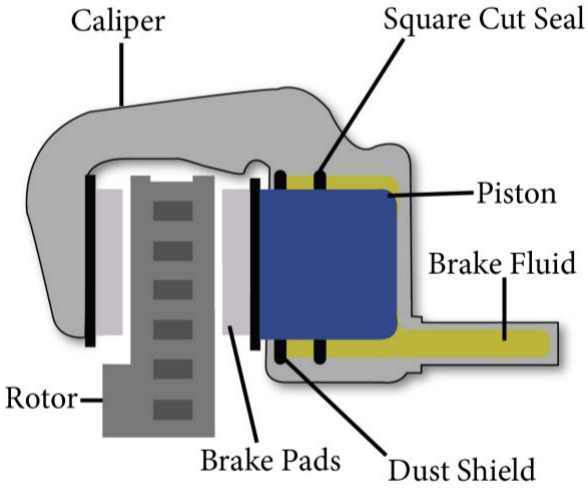
1.) Have your assistant apply the brake pedal.
2.) Watch to see the caliper piston come out of its housing and apply the brake pads against the rotor (See Figure 1).

Figure 1



3.) Have your assistant take their foot off the brake pedal.
4.) Watch to see the caliper piston retract back into its housing (See Figure 2).

Figure 2



Checking the Caliper Piston with a Dial Indicator

This method is a rarely used in a shop setting. However, by hooking up a dial indicator to the caliper, you can physically measure the movement of the caliper piston.

1.) Have your assistant lightly apply the brake pedal. If you press the pedal all the way down to the floor, the piston will pop out of its housing.

2.) Measure the movement of the piston on the dial indicator until it reaches 10 to 15 thousandths (See Figure 3).
3.) Have your assistant take their foot off the brake pedal.
4.) Measure the retraction of the piston. If the movement is anywhere between 4 to 6 thousandths, the square cut seal is working properly.

Figure 3

If the caliper piston does not retract back into its housing during these tests, you know that the square cut seal is compromised. This means that you must replace the caliper or refit it with a new square cut O-ring seal.