

STOPPING A NEON

Installing front disc brakes on a hot Dodge Neon



The Wilwood part number 140-6376 front disc brake kit features Forged Dynalite calipers, caliper brackets, 12.19-inch diameter drilled and slotted rotors with aluminum hats, BP-10 Smart Pads and all of the hardware required to complete the installation.



Chrysler has been in the news lately when it became a casualty of the downturn in the economy. First Daimler purchased Chrysler, then an investment group independently purchased it and finally Fiat purchased the company. When Daimler purchased the company there was an exodus of the best engineers and designers the company ever had. The result was the progressive cab forward look was immediately dropped in favor of the squared off Mercedes look. Apparently the Chrysler designers took all of their ellipse guides with them when they moved out and the Daimler designers were left with rulers because the new generation Chrysler products were boxy and angular. Fiat has a reputation of building ugly small cars so it's difficult to predict Chrysler's success in the future.

One of the casualties of the Chrysler debacle was the Dodge Neon. This was the entry-level car that Dodge should have perfected but never did. The Neon was a small car with a cab forward look and that design gave the car a wide track and more interior room than any other car in the class. The dual overhead cam engine was a good performer and the wide track improved the car's handling ability so this was a perfect car for the young guys that wanted a fun car to drive. When the car was released, it was offered in a two-door coupe and a four-door sedan model so one would think the little coupe could be turned into a nice looking econo-rocket. Dodge offered the car in some wild colors so it did catch the eye of number of young guys who wanted to build a performer.

The Neon featured in this story is one of them.

The car features many improvements including large diameter wheels and low profile tires. The owner of this car uses it as a daily driver and that includes driving it on many of California's twisty canyon roads. He has also had the car on the track a few times so he quickly found out that improved brakes would make the car more fun to drive. The owner looked at the Wilwood Engineering website to see if there was a brake kit that would make an improvement and he found Wilwood part number 140-6376 that would provide all of the braking power he would need. In order to hook up the kit he would also need a Wilwood part number 220-8998 hose kit. The owner contacted a Wilwood dealer and ordered the parts he needed for the improvement. It would also be good to note that the Neon and the PT Cruiser shared the same platform so this brake kit will also fit the Cruiser.

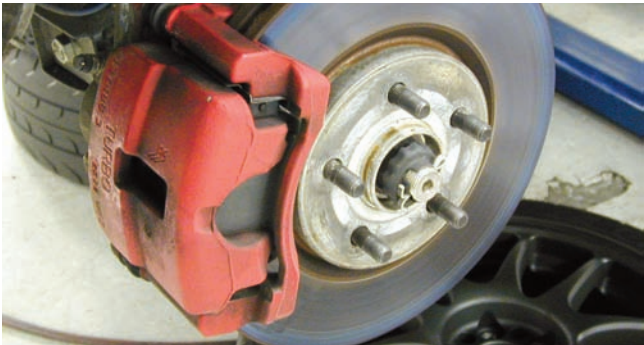
After he received the kit, he was ready to install it. Wilwood Engineering recommends persons experienced in the installation and proper operation of disc brake systems should only perform the installation of this kit. A hobby builder can install this kit if he has good mechanical ability, car building experience and a good assortment of tools. In order to complete this installation you need a floor jack and jack stands, an assortment of standard and metric wrenches and sockets, line wrenches, an impact gun, a foot-pound and an inch-pound torque wrench. Before the brake installation starts it would be a good idea to spread all of the parts out so you can make sure that all of the parts are included in the kit. Check the parts with the parts list on the instruction sheet. We are going to show you the installation to give you a chance to decide whether you want to install the system on your car, or have a professional do it for you.



The car was raised with a floor jack and then jack stands were placed underneath it for safety. Using an impact gun and the appropriate size socket, the lug nuts were disconnected and the wheels and tires were removed.



The lower strut bolt interferes with the removal of the original caliper bolt so it had to be disconnected enough to get the bolt out of the mounting ear. Here the strut bolt is being loosened with an impact gun.



After the wheels were removed, you can see the original brake system. This car is equipped with heavy cast iron parts so the Wilwood brakes will lower the car's unsprung weight for improved handling ability.



The mounting ears have large holes so sleeves were used to get the holes down to the Wilwood caliper bolt size.



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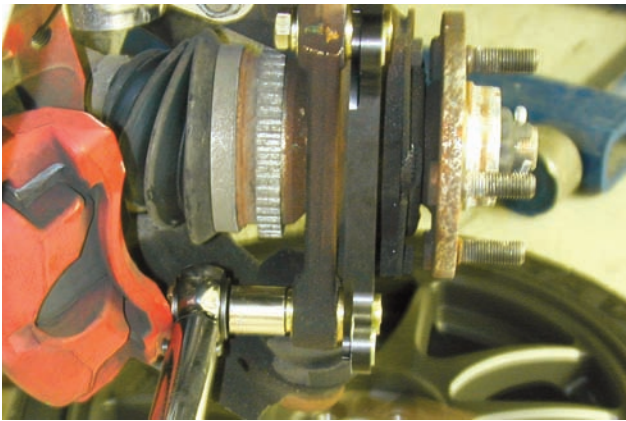
The caliper bolts were placed through the sleeves. Here you can see a 0.063-inch thick washer on the outside of the mounting ear and a 0.125-inch thick washer between the mounting ear and the Wilwood caliper bracket.



Using a socket wrench, the original calipers were removed from the hub assembly. If the bolts are really tight you might have to loosen the bolts with a breaker bar.



The Wilwood caliper bracket was set in place and the bolts were connected finger tight.



After the bolts were started, they were completely tightened using a ratchet wrench and the appropriately sized socket. After the rotor to caliper centering was finished, the bolts were coated with Loctite 271 and were tightened to 35 ft-lbs using a foot-pound torque wrench.



The strut bolt that was loosened to remove the original caliper bolt and install the Wilwood bolt was tightened with an impact gun and a box-end wrench.



The rotor and aluminum hat have to be bolted together using the bolts and washers supplied in the kit. The bolts were coated with Loctite 271 and then they were tightened to 120-144-inch pounds using an inch-pound torque wrench. After the rotors were assembled they were installed on the hub assembly.



The Neon uses an inner fender mounted bracket that will have to be changed to accommodate the new brakes. Here the original hard line is being disconnected from the rubber hose connection.



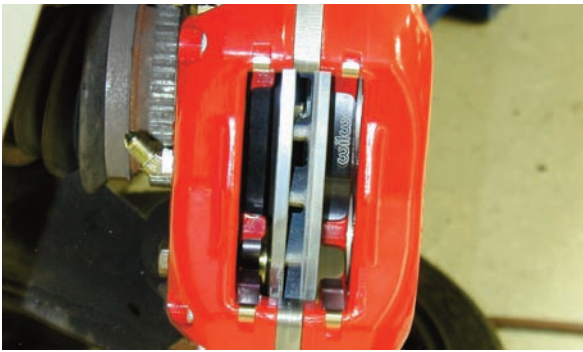
Using a socket wrench and the appropriately sized socket, the mounting bolt was disconnected from the inner fender well.



Using a section of aluminum L-angle, a new bracket for the hoses will be fabricated. The circles are where the holes will be drilled.



Here is the finished bracket installed and outfitted with the fitting that mates the steel line to the Wilwood braided steel line. At this point the Wilwood line is not installed. The other line connects to the strut.



The caliper was mounted to the bracket and it was centered over the rotor. The caliper is outfitted with BP-10 Brake pads as seen here. Also the inlet fitting threads were coated with Teflon tape and here you can see it connected to the side of the caliper.



This close look reveals perfect centering and another important area to check. The radius of the rotor should match the radius of the brake pads as seen here.



The Wilwood brake pads are held in place with this long cotter key. The ends were bent over but not so much that they couldn't be straightened out when new brake pads are required.



The Wilwood part number 220-6420 brake lines were connected to the caliper inlet fitting. The lines were tightened with a line wrench.



The brake line was run safely behind the strut assembly and it was connected to the bracket on the inner fender well.



The new Wilwood brakes were easy to install and are superior to the original brakes. Another nice feature is the brake system is very attractive and that will look great when the large diameter wheels are installed.



Before the wheels were installed, the brakes were bled. A hose was run from the bleeder screw to the bottle that is partially filled with brake fluid. The brake pedal is pumped and held and while it is being held, the bleeder valve is opened to let out the trapped air. The brakes should be bled starting with the brake that is the farthest away from the master cylinder working toward the closest.



Since this is a front wheel drive car, the brakes were bedded in without even having to drive the car. Accelerate to 30mph and make several hard stops until some brake fade is noticed. Allow the brakes to cool and the process should burnish the brake pads, offering maximum performance.



Here is the wheel installed and ready to go. The car will stop well and the brakes look terrific behind the large windows in the wheels.

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