

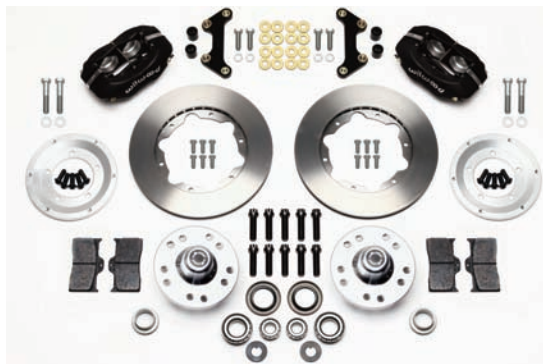
STOPPING AN EARLY CORVETTE

Wilwood disc brakes for '53 to '62 Corvettes

The front brake kit part number 140-11811 features Forged Dynalite calipers, aluminum hub assemblies, rotor adapters, 11-inch rotors, caliper brackets, BP-10 Smart Pads and all of the hardware required to finish the installation. This kit can also be used on 1949 to 1954 Chevy passenger cars.



The rear brake kit part number 140-11827 features Billet DynaPro calipers, a pair of internal drum parking brake and caliper bracket mechanisms, a pair of 11-inch rotors designed to work with the internal parking brakes, BP-10 Smart Pads, and all of the hardware needed to finish the installation.



After WWII automobile production was underway, and the engineers and stylists were working overtime to meet the growing demand for cars. Many of the returning service men that were stationed in England had the opportunity to drive some of the English sports cars such as the MG, the Morgan, the Austin Healy and the Triumph and they really enjoyed the sporty little cars, consequently, they started importing them into the United States. The sales of the English sports cars was noticed by American manufacturers, especially General Motors, so in 1951 Harley Earl, the man who started the "Concept Car" idea, decided to build a prototype to see if there was a popular interest in an American sports car. Robert McLean was given the job of designing and building the concept sports car using standard Chevrolet parts. Harley Earl wanted the car to sell for the same amount as a regular Chevy passenger car.

McLean started with a Chevy sedan chassis that he shortened to a 102-inch wheelbase. McLean and Earl both wanted a body design that would distinguish their new car from the English offerings, so a bold design was conceived. The body was very aerodynamic, so to keep the cost down the

design team decided to make the body out of fiberglass, which was a new process at the time. The new sports car was starting to look really nice and the Chevy six-cylinder engine was going to be used in a modified form with a hotter camshaft and multiple carburetors. The concept sports car was going to debut at the 1953 New York Auto Show, but before it did, Ed Cole, the Chief GM Engineer saw the car and really liked the idea, so it quickly became a new production model. Before the car could debut, it needed a name so a meeting was called and Myron Scott, an Assistant Advertising Manager suggested the name Corvette.

The new Corvette debuted at the New York Auto Show and it was a big hit, so the problem McLean and his team faced was getting the car from the concept stage to a regular production car. An assembly line had to be set up and that didn't get started until later in the year. There were only 300 Corvettes built in 1953 and all of them were white with a red interior. It took several years for the Corvette to become profitable, so there were only body changes and engine upgrades from 1953 to 1962. The chassis remained unchanged and continued to use the same early Chevy front

suspension.

Similar to many early cars, the Corvettes were equipped with drum brakes that were marginal at best and terrible when the car was being driven in the rain. Wilwood Engineering recently released a new kit to upgrade early Corvettes and it was done in a manner that the original brakes could be reinstalled at any time if the owner wanted to sell the car as an original. The owner of this early Corvette drives the car on weekends to shows and driving events, so he wanted to improve the Corvette's stopping power as a safety factor. He wanted to make sure that if he was driving on the highway and a new car was making a panic stop, he could stop just as fast or faster than the newer car. He was familiar with the Wilwood products and knew the brakes would give the car superior stopping power without fade. The new front kit that was selected is part number 140-11811. The kit features Forged Dynalite Calipers, aluminum hub assemblies, 11-inch rotors, caliper brackets, BP-10 Smart Pads and all of the hardware required to complete the installation. The rear brake kit, part number 140-11827 features Billet DynaPro calipers, a pair of internal drum parking brake mechanisms and caliper brackets, 11-inch rotors that work with the parking brake mechanisms, BP-10 Smart Pads and all of the hardware required to finish the installation. The front brake kit also fits '49 to '54 Chevy passenger cars and the rear brake kit fits '56 through '62 Corvettes. When the front and rear brakes are installed, the original fruit jar-style master cylinder will have to be replaced with a Wilwood aluminum tandem master cylinder. There are

three finishes available and three bore sizes to choose from so your Wilwood sales representative can help you select the one that is perfect for your application. This Corvette was equipped with a part number 260-8555 master cylinder. Wilwood also makes braided steel flex lines for this application.

The Chief Technician, Tony Porto, did this installation at the Wilwood Engineering tech center in Camarillo, California. 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 an adequate assortment of tools. In order to complete this installation you will need a floor jack and jack stands, an assortment of standard wrenches and sockets, a socket wrench, line wrenches, an impact gun, a foot-pound and an inch-pound torque wrench. It would also be a good idea to have a bottle of Loctite 271, a roll of Teflon tape and a few bottles of Wilwood Hi-Temp 570 Racing Brake Fluid or Wilwood EXP 600 Plus Super Hi-Temp Racing Brake Fluid.

Before the installation is started, it would be a good idea to spread all of the components out so you can check the items in your kit 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. When you are finished, you will have a four-wheel disc brake kit that will make your Corvette stop like a brand new one.



The original Corvette hubcaps were carefully removed by prying the edge up with a screwdriver.



After the hubcaps were removed, the five lug nuts that secure the wheel to the brake drum were disconnected and then the tire and wheel were removed.



Here is the original Corvette front drum brake assembly. This unit requires removal to install the disc brakes, so hang on it if you ever decide to do a perfect restoration.



Removing the dust shield with channel lock pliers started the disassembly procedure.



The cotter key was removed from the nut to spindle connection. Here the cotter key is being removed with cutting pliers.



After the cotter key was removed the spindle nut was loosened with the large channel lock pliers. This can also be done using a large crescent wrench.



After the nut was disconnected, the brake assembly was removed from the spindle.



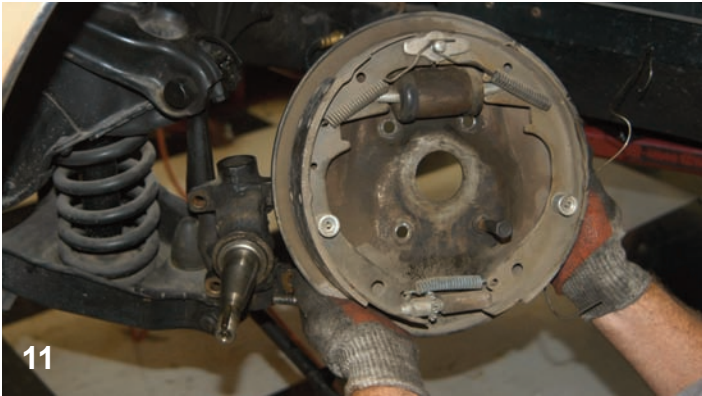
This spindle is equipped with a bearing adapter and spacer. It was removed at this time.



The backing plate is held on to the spindle with four nuts and bolts. First the cotter keys were removed from the nuts.



Using an impact gun and a box-end wrench the backing plate nuts and bolts were disconnected.



11

The backing plate was removed from the spindle and for now it was moved out of the way.



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Similar to the original hub assembly, the spindle was outfitted with a bearing and seal adapter.



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Here you can see how the bearing will ride on the front part of the bearing adapter when it is positioned in the hub assembly.



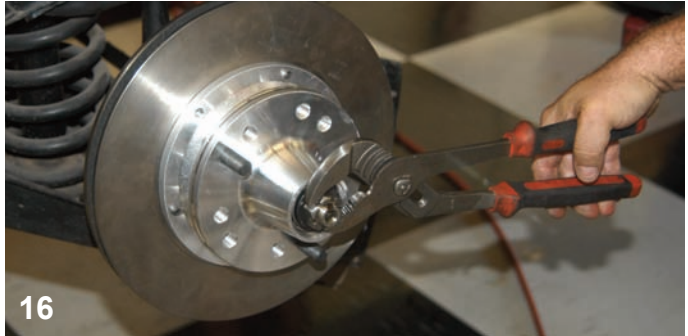
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The caliper bracket connects to the upper two spindle mounting holes as seen here. On the final assembly, the bolts were coated with Loctite and they were tightened to 35 ft-lbs using a foot-pound torque wrench.



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The bearings were packed with disc brake bearing grease. The large rear bearing was placed into the hub assembly and the seal was pressed in place. The front bearing was installed in the front of hub and then the hub and rotor were installed on the spindle as seen here.



16

A large washer was installed on the spindle followed by the spindle nut. The nut was tightened with large channel lock pliers until the rotor was snug but not over tight. The nut was tightened until a cotter key could be installed. After the cotter key is in place the dust cover can be installed.



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The caliper was installed over the rotor, the holes were lined up with the bracket, and then the bolts were installed.



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The BP-10 Brake pads were installed in the calipers. This is a top loading system that makes brake pad changing easy.



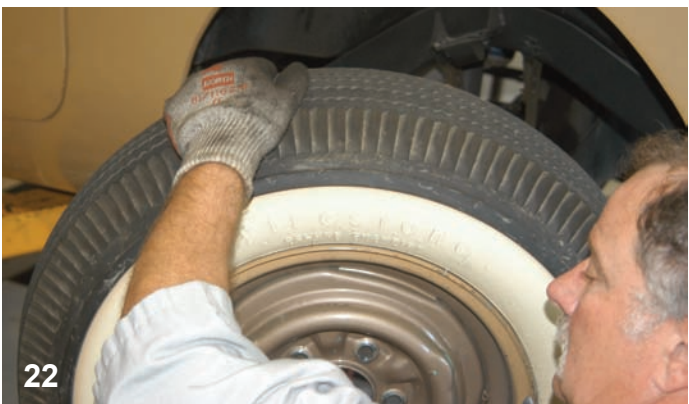
After the pads were installed, the caliper bolts were tightened. Tony made sure the caliper was centered over the rotor, and after it was, the bolts were coated with Loctite 271 and were tightened to 77 ft-lbs.



Now we move to the rear suspension. The hubcap was removed by prying the edge up.



Using an impact gun and the appropriately sized socket, the rear lug nuts were disconnected.



After the lug nuts were disconnected, the tire and wheels were removed.



The brake drum was removed, exposing the brake system and backing plate.



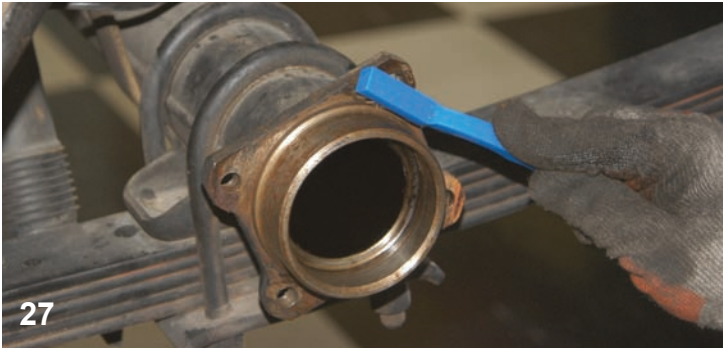
Using a long box-end wrench the bolts that connect the backing plate to the axle were removed.



Here Tony is removing the axle assembly. An axle puller may have to be used to break the connection loose.



After the axle was removed the backing plate could be removed from the car.



After the backing plate was removed, the end of the axle was cleaned with a wire brush.



The Wilwood internal drum parking brake mechanism was installed on the axle and the holes in the unit were lined up with the holes in the axle flange. Notice that this unit is also equipped with the caliper bracket.



In order to get the axle back in place, at least two of the mounting bolts will have to be removed from the bearing retainer.



Before the axle is reinstalled, this small bearing spacer has to be installed in the axle.



The axle was reinstalled, and the bearing retainer bolts were aligned with the holes in the internal drum parking brake unit and axle flange. The four bolts were installed at this time and then the nuts were started on the back-side.



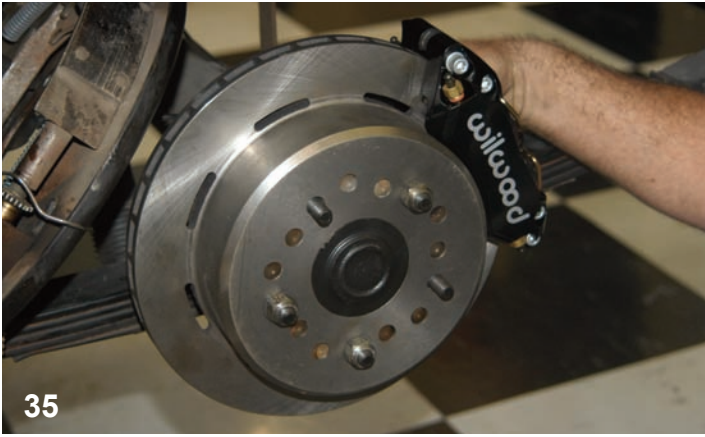
The four nuts were tightened with a box-end wrench. The nuts should be very tight.



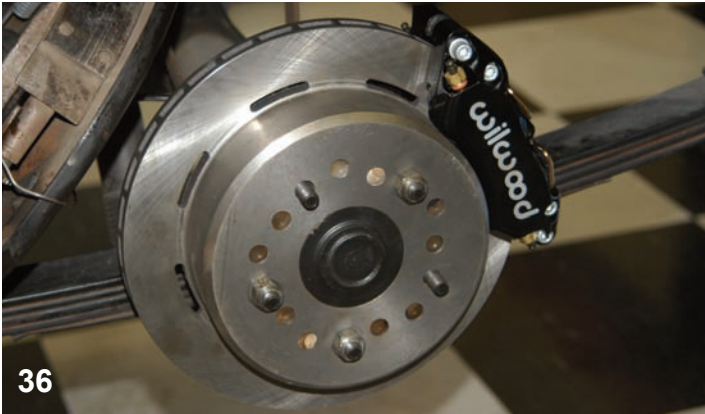
The axle was spun in the housing to make sure there was no interference and then the axle flange face was cleaned with a wire brush to remove any debris.



The special 11-inch rotor that works with the internal parking brake mechanism was installed. Three lug nuts were installed to check the caliper to rotor centering.



The caliper was installed and it lined up properly. After the centering was checked and it was fine the BP-10 brake pads were installed.



Here is the rear internal parking brake disc brake assembly. The system will easily bring the lightweight Corvette down from speed and the internal parking brake works terrific.

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