BIG MINI BRAKES

Installing Wilwood disc brakes on a first generation Mk I Mini Cooper

The owner of this MINI ordered a 140-8528 disc brake kit that features Billet Dynapro Calipers, 12.19-inch slotted rotors, aluminum hat adapters, caliper brackets, BP-10 Smart Pads and all of the hardware required to complete the installation.

The original Mini Coopers that debuted in 1959 were extremely small and economically priced so that English buyers, as well as other Europeans could afford them. The cars were short and small, so they could navigate the tight roads in England and Europe that were originally built hundreds of years ago for horses and buggies. The Mini's size was deceiving because the sedan could hold four adults comfortably. When the cars were designed they were front wheel drive and had a low profile stance, and as a result the Minis had a very low center of gravity. Drivers quickly found out that no matter how fast you went into a curve the cars wouldn't turn over. They were like a go-cart with a body! It didn't take long before the small cars were entered in road races and even though the little engines didn't develop a lot of horsepower they made it up in the corners were other cars would have to slow down to go around them. Over the years the Mini Coopers became legendary.

The Mini Cooper and Cooper S sedans, with only minor differences over the years, had a long lasting production run until the final car was built in 2000. The cars were produced in several countries and from start to finish 5,387,862 were produced. In the mid-'90s BMW purchased the remnants of British Motor Cars (BMC) called the Rover Group. Rover sold the parts of the group but kept the Mini name. As early as 1995 the designers and stylists at BMW and at Rover were working on an update of the Mini. BWM wanted a sporty driver and Rover wanted an economy car. When BMW and Rover parted company the Mini name and concept remained part of BMW and the designers turned it into a sporty car that retained the cool design features of the original. The new car was going to be called the MINI with capital letters to distinguish it from the original cars. The new retro-styled MINI strongly resembles the original but it is actually larger and features many mechanical upgrades. The one thing BMW didn't want to loose was the exceptional handling of the original car and they managed to do that. The new MINI has exceptional handling and a strong running engine.

The first generation of the Mini that ran from 2001 to 2006 was unofficially called the Mk I and it included four hatchback models, the Basic MINI One, the diesel powered MINI D, the sportier MINI Cooper and the supercharged MINI Cooper S. The next generation, the Mk II was released in 2007 and is currently in production. The first generation Mini was powered by an engine co-developed by Chrysler and BMW and the engines were built in Brazil and shipped to the UK. The Mk II MINI received an engine change when a Peugeot/Citroen engine that is more powerful and could be built in England was used.

The owner of the first generation MINI Cooper S in this story drives it on the street and on the track and quickly found that the brakes were marginal on the race track. He wanted to make an improvement so he searched the Wilwood Website and found the perfect upgrade for his car. He selected the Wilwood part number 140-8528 front brake kit that features Billet Dynapro calipers and 12.19-inch slotted rotors. Along with the disc brake kit he ordered the 220-8491 braided steel line hose kit to finish the installation. With all of the parts ready to go the brake installation was the next step.

Wilwood Engineering recommends that persons

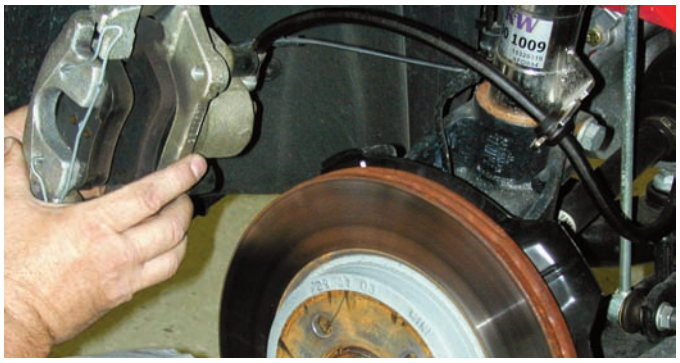
tion of disc brake systems should only perform the installation of this kit. A hobby builder can install this kit if he has good mechanical knowledge and ability, car building experience and a good assortment tools. The installer will need a floor jack and jack stands, an impact gun, metric wrenches and sockets, line wrenches, and an inch-pound and foot-pound torque wrench.It would be advisable to spread the kit components out to make sure you have all the parts listed on the instruction sheet.

It would also be handy to have a few other items such as 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 Hi-Temp Racing Brake Fluid. We are going to show you how this installation is done so you can decide for yourself if you can perform this installation or if it would be better to have a professional do it for you.

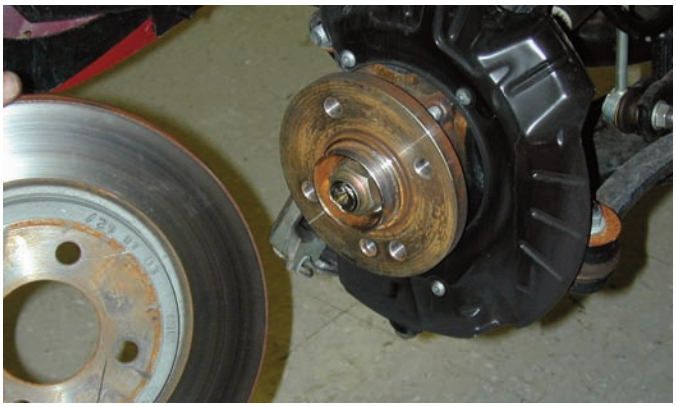
The car was elevated using a floor jack and then jack stands were placed under the car for safety. Using an impact gun and the correct size socket, the lug nuts were disconnected and the wheels and tires were removed.

Here is the original brake setup that features heavy cast iron BMW single-piston calipers and rotors.

Using a long socket wrench and the appropriate size socket, the two bolts that secure the caliper to the bracket were removed.



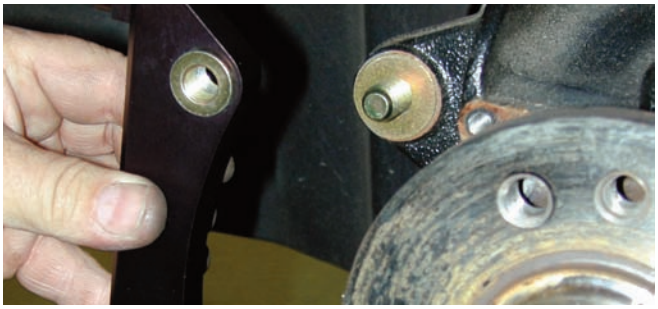
After the mounting bolts were disconnected, the caliper was lifted off of the spindle and rotor.



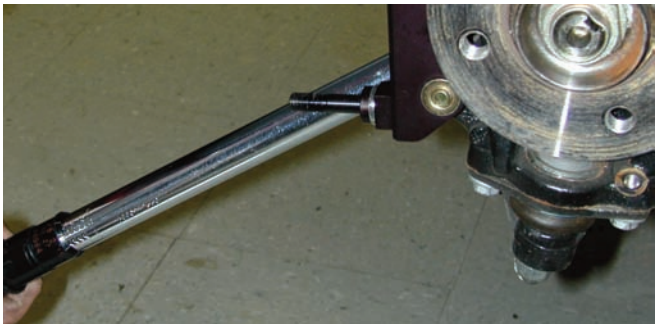
The screw connecting the rotor to the hub assembly was disconnected and then the rotor was removed. Hang on to the screw because it will be reused. With the rotor removed you can see the dust shield that will have to be removed.

Using an Allen wrench, the bolts that secure the dust shield to the spindle were disconnected and then the dust shield was removed.

Here is the spindle and hub assembly after the dust shield was removed. Now it is easier to see the original mounting ears where the Wilwood caliper brackets will be attached.



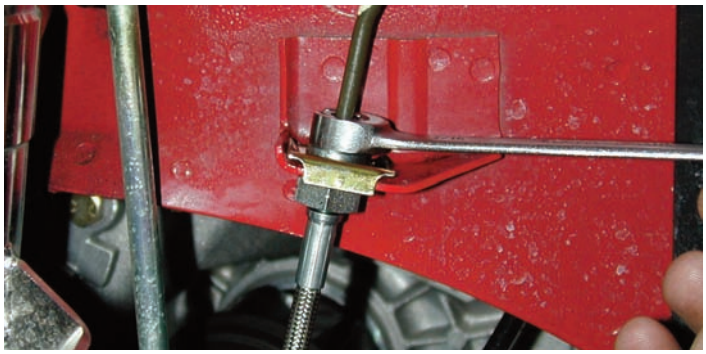
The mounting bolts were placed through the original caliper bracket and then they were loaded with two shims per bolt. The bracket was bolted on so the caliper to rotor spacing could be checked.



After the caliper to rotor spacing was correct, the bolts were coated with Loctite 271 and then the bolts were tightened to 75 ft-lbs using a foot-pound torque wrench.

The adapter hat was bolted to the rotor using the bolts in the kit. The bolts should be coated with Loctite 271 and then the bolts should be tightened to 144 in-lbs. The rotor was then placed on the hub assembly.

Using the original mounting screw the rotor was attached to the hub assembly.



The Wilwood 220-8491 braided steel flexible line was connected to the original hard line using a line wrench.

The original bracket outfitted with a rubber grommet directs the Wilwood line from the hard line to the caliper.

The caliper with the brake line installed was placed over the caliper mounting bracket studs. The centering was already checked so the pads were installed and the caliper was ready to be mounted permanently.

After the caliper was in place, the washers were installed and the two locknuts were tightened to 35 ft-lbs using a foot-pound torque wrench.

Here is the Wilwood Dynapro disc brake kit installed and ready for bleeding and bedding. This system features a four-piston caliper, a larger rotor and it is equipped with BP-10 Smart Pads for quick stopping power. The owner was very pleased with the brake improvement on the street and on the track.

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