

# SLOWING DOWN A POTENT PONY

Installing Wilwood Engineering disc brakes on a '68 Mustang



The 140-11071 disc brake kit for 1965 to 1969 Mustangs comes complete with Dynalite calipers, caliper brackets that work for both disc and non-disc brake spindles, hub assemblies, rotor adapters and 11-inch rotors. The kit also comes with the BP-10 Smart Pads and all of the hardware required to install the kit on your Mustang.



Ford released the Edsel and ultimately it was a financial disaster, so in 1961 when Lee Iacocca, the Vice President and General Manager of Ford Division suggested a new model should enter the Ford line, many people inside of Ford were skeptical. Iacocca wanted a small car that would seat four people, have bucket seats and a center floor shift, and be no more than 180-inches long. He also wanted it to weigh less than 2,500 pounds and sell for less than \$2,500. He basically wanted a very sporty transportation car to capture the hearts and minds of the emerging baby boomer market. After the Edsel debacle, the management wanted to make sure the car would be successful so there were many meetings and consumer surveys before the project was started. After all of the intellectual discovery was completed, it seemed as if the car would be a hit with younger buyers, so in September 1962 the Mustang was approved for production and it became a well kept secret.

Hints of the new Mustang were carefully released by Ford just before the car was released and the day before it was unveiled, Ford ran full page newspaper ads and television commercials on all of the major networks and the following day, April 17, 1964 people converged on the Ford dealerships with checkbooks in hand. Ford sold 22,000 Mustangs on the first day and ultimately by the end of the year Ford sold 263,434 Mustangs. Ford was having success with the '64 ½ Mustang but down the street at the Pontiac dealership there was another new car aimed at the youth market, but this

new GTO had a big 389ci, 348 horsepower triple carbureted engine. It was clean, mean and powerful, and like the Mustang, Pontiac couldn't build them fast enough. The Mustang engine compartment was narrow so a really large engine wouldn't fit so Ford did the best they could with the solid lifter, high-performance 289 V8 engine. The next generation Mustang was already on the drawing boards so the designers and engineers were instructed to make sure the 390ci engine could fit into the '67 Mustang.

In 1967 the new Mustang was released and it was a little larger and wider than the original and it was available with a big-block engine. The 320 horsepower 390ci engine was a formidable contender in the muscle car battles that were going on between all of the car manufacturers. Yes, the cars were getting faster, but the brakes didn't improve much. Most of the early Mustangs were equipped with drum brakes, but in 1967 Ford did release a disc brake option with four-piston calipers. Ford was having problems with the four-piston brakes so in 1968 an entirely new two-piston disc brake option was offered.

The owner of the Mustang in this story was in the process of turning it into a mild street machine so his plans called for engine modifications to boost engine performance, custom wheels and tires to enhance its appearance

and he also wanted to improve the car's stopping power so a brake upgrade was required. He contacted Wilwood Engineering and ordered a 140-11071 front disc brake kit that features Forged Dynalite calipers and large 11-inch vented rotors. This brake kit will also need a new Wilwood part number 220-9195 hose kit.

After receiving the kit, the owner was ready to improve his Mustang. 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 will

need a floor jack and jack stands, an assortment of standard wrenches and sockets, an impact gun, line wrenches, a foot-pound and an inch-pound torque wrench. Before the brake installation starts it would be good idea to spread all of the parts out so you can make sure that all of the parts are included in the kit. Make sure that you have all of the parts listed on the instruction sheet. It would also be a good idea to have Teflon tape, Loctite 271, and Wilwood Hi-Temp 570 Racing Brake Fluid or Wilwood EXP 600 Plus Super Hi-Temp Racing Brake Fluid. We will show you the entire installation so you can decide whether you can do the work yourself, or if it would be better to have a professional do it for you.



In 1967 Ford introduced disc brakes with four piston calipers, but because of problems the disc brake system was changed to dual piston calipers in 1968 as shown here. This is the original brake system that was delivered by the factory.



After the caliper bolts were disconnected, the caliper was removed from the car.



Removing the caliper from the caliper bracket started the installation. The rubber flex hose to hard line connection was also disconnected with a line wrench.



The dust cap was removed from the rotor so that the cotter key and spindle nut could be accessed. The cotter key was removed and the large spindle nut was disconnected with a large crescent wrench.



Here the rotor is ready to be pulled off of the spindle. The nut and washer should be saved and cleaned because they are used for the reinstallation of the Wilwood rotor.



The wire brush did a nice job of cleaning off the spindle and it also removed the original surface-rust as seen here. Notice that this disc brake spindle has three mounting holes while the drum brake spindle (not shown) has four mounting holes.



After the caliper was removed, you can see the original dust shield. It will have to be removed for this installation.



This caliper bracket is designed so that it can be used on either the disc or drum brake spindle so the three appropriate holes were lined up and the bolts that were included in the kit were installed.



The three bolts were disconnected from the spindle and the dust shield was removed.



The mounting bolt should be coated with Loctite 271 before it is installed and then all of the bolts should be tightened to 40 ft-lbs.



The face of the spindle was cleaned off with a wire brush to make sure any grease and debris were removed.



The rotor was connected to the adapter plate using the bolts in the kit. The bolts should be coated with Loctite 271 and then they should be tightened in an alternating sequence to 180 in-lbs.



The lug studs should be installed in the hub assembly and they should be tightened to 77 ft-lbs. The hub has two stud patterns so make sure you install the studs according to the pattern you need. Now the hub can be attached to the adapter plate using the bolts in the kit.



The rear bearing was loaded into the spindle and the grease seal was installed. Now the rotor can be mounted on the spindle and the front bearing can be installed. Both bearings should be packed with high temperature disc brake bearing grease.



The adapter plate was connected to the rotor using the five bolts in the kit. The bolts were tightened to 55 ft-lbs. Here you can also see the bolts are being safety wired together to make sure the bolts do not back out.



The washer and the original nut were installed. The nut was tightened but it shouldn't be over-tight. Tighten it down until the rotor makes about a  $\frac{3}{4}$  turn when you spin it. After it is secure it should be equipped with a cotter key so the nut doesn't back out.



After the adapter plate and hub assembly are connected together, the rotor is ready for installation. Looking at the hub assembly from the front you can see the two lug stud patterns. At this point the bearings should be loaded with grease and the rotor can be installed.



After the nut is tightened and the cotter key is installed, the dust cap can be installed. This dust cap is held in place with a large rubber O-ring.



The mounting bolts were placed into the caliper mounting holes and they were loaded with two shim washers. The shims can be used to adjust the caliper to rotor centering.



The finished brakes will provide better stopping ability and they will look nice doing it. The owner is very pleased with the positive results.



The caliper was placed against the bracket and then the bolts were hand tightened. After the caliper was in place the bolts were tightened with a socket wrench to check the caliper to rotor centering. After the caliper was centered the bolts should be removed, coated with Loctite 271 and then they should be reinstalled and tightened to 40 ft-lbs.



This Mustang is going to be equipped with American five-spoke wheels so before the car was finished the wheels were bolted on to check the clearances.

### **Wilwood Engineering**

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