

# BOSS BRAKES

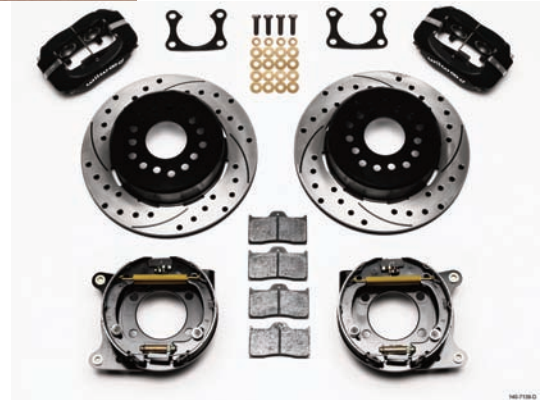
Installing Wilwood four-wheel disc brakes on a '69 Boss 429 Mustang



The Wilwood Engineering disc brake kit 140-10219 comes with all of the parts needed to complete the installation and that includes the E-coated rotors, the aluminum hub assembly, the powder coated Dynapro calipers, the mounting brackets, and all of the hardware required to finish the installation.

If you are a Ford enthusiast you know that Boss 429 Mustangs have become a priceless commodity, and most of the remaining cars are museum pieces that are occasionally driven to shows and events. The big twisted-hemi powered Mustangs were built in extremely limited numbers to qualify the engine for NASCAR racing with 867 built in 1969 and 499 built in 1970. The 1969 Boss 429 that we will show you is certainly show worthy, even though it has been a weekend driver since it was new. In an effort to get this Mustang running great, it was delivered to Holman & Moody for an engine rebuild and the big NASCAR engine was equipped with internal upgrades, a rare dual-quad intake manifold and a high performance exhaust system. This engine was under-rated at 375 horsepower when it was new, and this performance modified one is delivering much more.

This Boss has been running the OEM front disc / rear drum brakes since it left the factory, so the owner felt that it was long overdue for a change.



The Wilwood Engineering rear disc brake kit 140-7142 comes with a right and left bracket kit that includes an internal parking brake setup, E-coated rotors, bearing retainers, powder coated Dynapro calipers and all of the hardware required to finish the installation.

The owner contacted a Wilwood Engineering dealer and ordered a Wilwood part number 140-10219 front disc brake kit and a part number 140-7142 rear disc brake kit that features Billet Dynapro 6 calipers on the front and Billet Dynapro 4 calipers on the rear. In addition to ordering the brake kits, a new Wilwood brake hose set part number 220-9195 was ordered for the front calipers and a new universal parking brake cable set part number 330-9371 was ordered for the rear brakes. Mustang enthusiasts will tell you that the same factory disc brake setup was used on all of the performance Mustangs such as the Boss 302, the Mach I, the Shelby and it was optional on all of the other Mustangs. If you are currently driving or working on a '68 or '69 Mustang and were thinking about upgrading the brakes for your family's safety and improving your driving pleasure, the kits we will show you are perfect for your Mustang. Wilwood also makes similar kits for '70 to '73 Mustangs, but since there was a small spindle change, the part numbers for those kits are different. If you own a '68 or '69 Mustang, you can order part

part number 140-9501 for a four-piston caliper front disc brake kit and 140-10219 for a six-piston Caliper front disc brake kit. If you own a '70 to '73 mustang and want a four-piston caliper front disc brake kit you can order part number 140-9189 and if you want a six-piston caliper front disc brake kit you can order part number 140-10220. Safety and performance should be the important reason for your disc brake improvement, but the brakes are also a nice appearance addition and almost a necessity if you are building a Mustang street machine or Pro Touring car.

The brake installation is straightforward and can be done by anyone with a moderate amount of mechanical ability. The tools required are basic hand wrenches, line wrenches, a socket wrench set, safety wire pliers, Loctite 271 thread locker, and an inch-pound and foot-pound torque wrench. If you have power tools such as an impact gun or an air ratchet wrench they will

certainly speed things up. Wilwood recommends that a mechanic experienced in the installation and proper operation of disc brake systems should only perform the installation. If you don't feel that you are up the task, contact a reputable mechanic to perform the installation on your car.

Another good idea would be to carefully lay all of the parts out to make sure you have everything needed to complete the installation. The instruction sheet has a parts list that you can follow. If something is missing, this is the time to figure out why. You should also make sure this is the correct kit for your application and you should also make sure the hub stud pattern matches your wheel lug pattern. In this story we will follow along as a Wilwood Engineering front and rear disc brake system was installed on this rare Mustang. The installation photos cover one side of the car, but remember what is done on one side is also done on the other side.



A floor jack was used to elevate the front of the car and then stands were used to support the vehicle. The tires and wheels were removed using a lug wrench, a socket wrench, or a socket on an impact gun.



.After the wheels and tires were removed, you can see the OEM disc brake unit that was innovative in 1969. This same disc brake unit can be found on a wide variety of Mustangs from the big Boss on down to the daily driver Mustangs. The Wilwood kit we are going to show you will fit on all of them.



The two caliper mounting bolts were disconnected and then the caliper was removed from the mounting bracket. After the caliper was removed, the original bracket was also removed from the spindle assembly.



The rotor was removed from the spindle by disconnecting the cotter key, the castle nut cover, the retaining nut and the large washer. All of the parts were retained for reassembly.





The spindle nut was loosened with a large crescent wrench and then it was disconnected by hand as seen here.



After the retaining nut was disconnected, the old rotor assembly was removed from the car. It is heavy so care should be taken when it disengages.



After the rotor was removed, the three small bolts that secure the dust plate to the spindle could be reached. Using a socket wrench and the appropriate size socket, the dust cover was removed and it was set aside.



The dust cover will not be used in this installation so it was placed in the swap meet pile. This was a good time to clean the spindle prior to installing the new hub assembly.



The strong mounting bracket for the caliper was installed to the spindle and was secured with an open-end wrench. This was a good time to inspect for interference from casting irregularities, machining ridges and burrs.



After the caliper pad and rotor alignment have been checked, the mounting bolts were coated with Loctite 271 and were tightened with a torque wrench to 65 ft-lbs.



The adapter rotor was secured to the hub assembly using the mounting bolts supplied in the kit. The bolts were coated with Loctite 271 and were tightened to 22 ft-lbs.

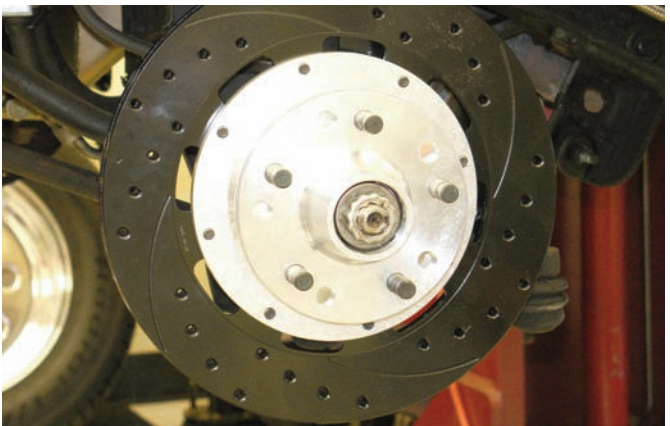




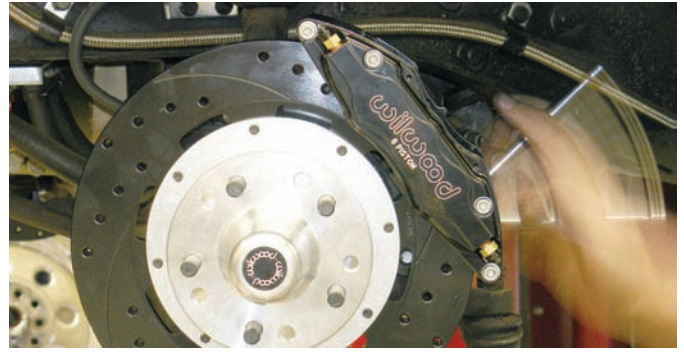
The rotor was connected to the hub assembly with the bolts supplied in the kit. The bolts were tightened to 180 in-lbs. The bolts should be safety wired following the illustration in the instruction sheet.



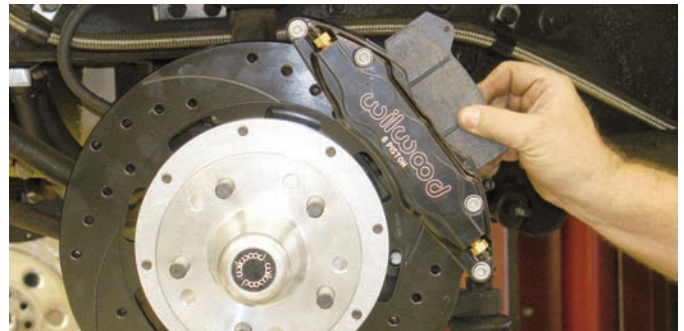
The hub bearings, large and small, were packed with high temperature disc brake bearing grease. The large bearing was loaded into the hub assembly and then the seal was installed as seen here.



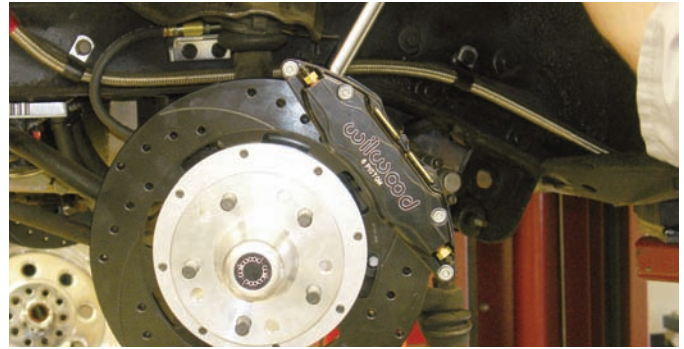
The rotor was placed on the spindle and the small front bearing was installed. A large washer followed by the nut was installed and after the nut was snug, it was covered with a castle nut cover. The nut and the cover were aligned with the hole in the spindle and then a cotter key was installed to eliminate any chance of the nut loosening.



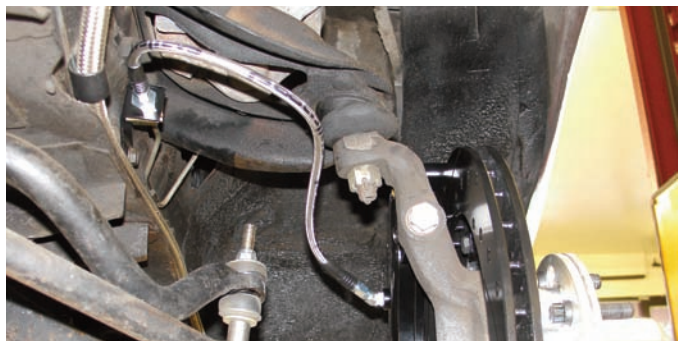
The caliper assembly was connected to the mounting bracket making sure the rotor was centered inside of the caliper. Adjustments can be made with the small shims that come with the kit.



After the caliper was installed on the bracket and was perfectly centered, the pads were installed from the top. After they were installed the retaining clip was installed.

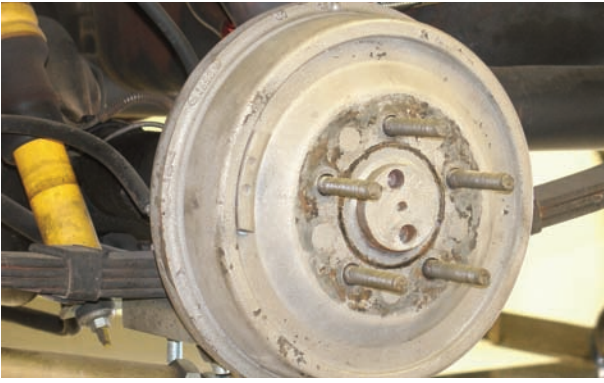


After everything was aligned perfectly, the Caliper bolts were removed one-by-one and were coated with Loctite 271. The bolts were connected again and then they were tightened to 42 ft-lbs.

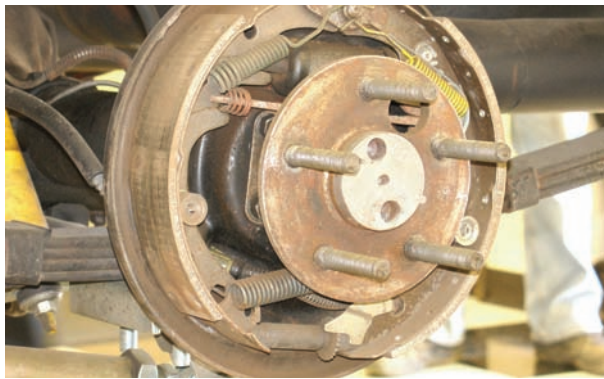


Using the specified brake hose assembly, it was connected between the original steel brake line and the caliper fitting as seen here. When the brake line was installed, care should be taken to ensure the line does not interfere with moving parts.





The front of the Mustang was lowered back on the ground and then the rear was elevated with a floor jack. Jack stands were placed under the axle housing for safety before the wheels and tires were removed. All of the early Mustangs were equipped with rear drum brakes.



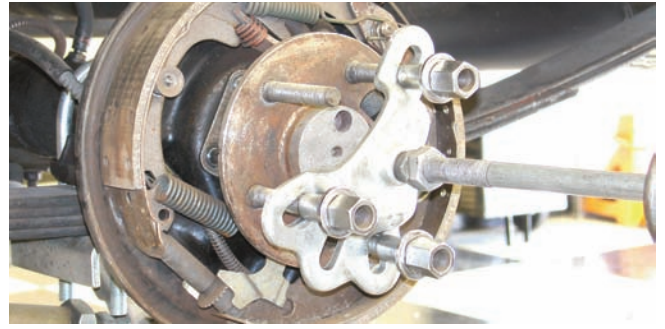
The brake drum was removed to access the backing plate and brakes. Four bolts secure the backing plate and the bearing retainer to the axle housing.



Using a line wrench, the original brake line was removed from the wheel cylinder that is mounted to the backing plate.



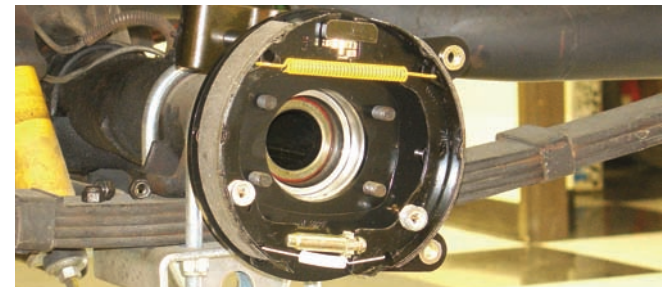
Using an impact gun and the correct size socket, the four backing plate mounting bolts were removed from the axle housing flange. The bolts were accessed through the hole in the axle flange.



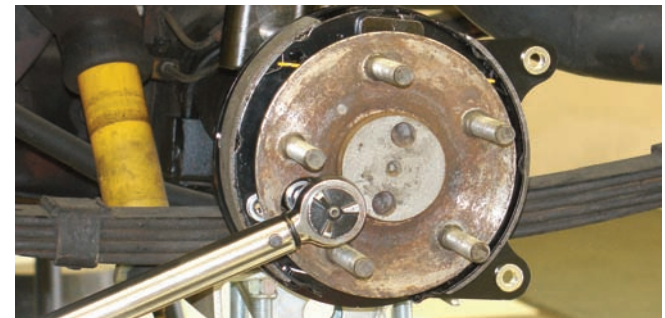
After the backing plate mounting bolts were removed, the axle was taken out. The bearings tend to stick to the inside of the axle housing, so a slide-hammer-style axle puller was used to get the axles out. After the axles were removed, the drum brakes and backing plates were removed as an assembly.



Before the backing plates were totally removed from the car, the parking brake cables were disconnected from the parking brake bracket. The original parking brake cables will not be used, so they were removed from the car, but the brackets and hooks will be used with the new cables.

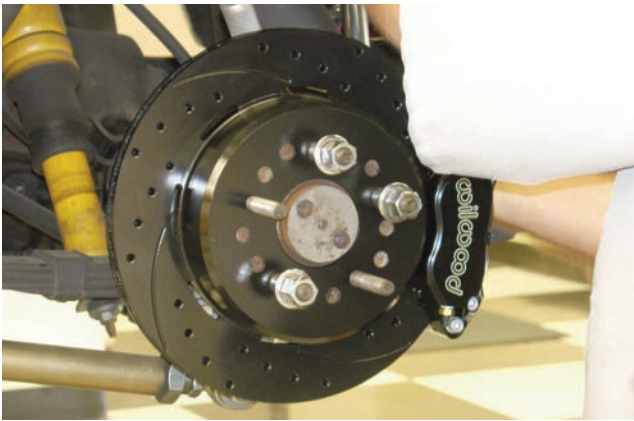


The original axle flange bolts were reinstalled in the flange, and then the internal parking brake and caliper bracket was connected to the axle as seen here.



We made sure the axle flange diameter was smaller than 6.61-inches so that it will fit inside of the hat. We also examined the axle bearings to make sure they were still in good condition. This is the time to change them if not. After everything looked good, the axle was reinstalled into the housing, the Wilwood bearing retainer was installed over the four bolts, and then the nuts were installed on the bolts and were tightened to hold everything in place.

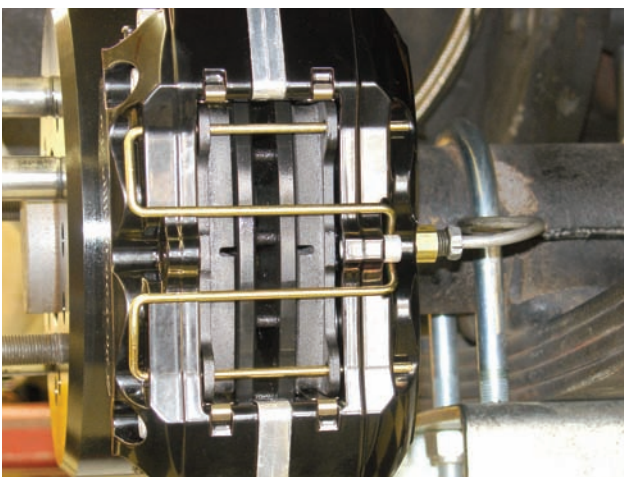




After the axle was installed in the housing, the rotor assembly was installed and it was secured with three mounting bolts. The caliper was installed with the bleed screws up and it was centered over the rotor using the washers and shims in the kit. When the center was determined, the bolts were removed one-by-one, they were coated with Loctite 271, then they were reinstalled and tightened.



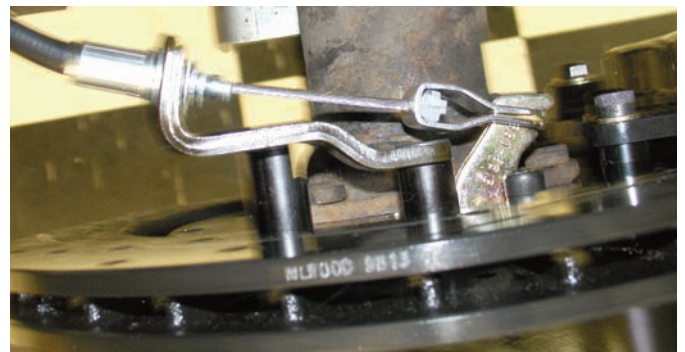
Here is the rear disc brake mounted to the axle assembly, and ready for the installation of the wheels and tires. Before that was done, the brake lines and emergency brake cable were installed.



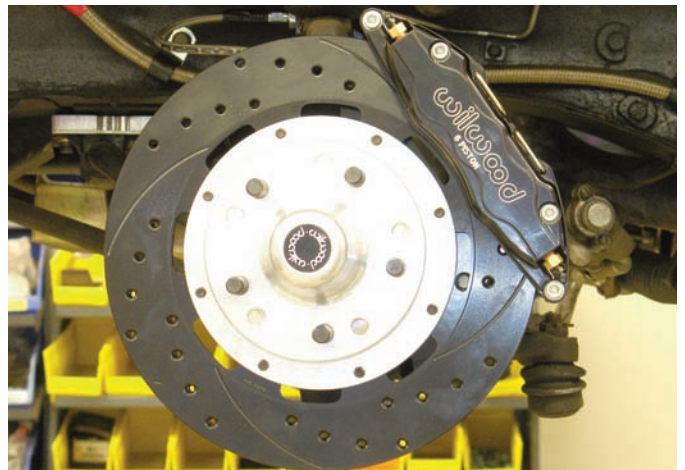
Here is the rear disc brake mounted to the axle assembly, and ready for the installation of the wheels and tires. Before that was done, the brake lines and emergency brake cable were installed. This also provides a good look at the quick clip pad retainer.



Following the routing of the original parking brake cables, the new lines were run from the front of the car towards the rear. All of the original cable hardware was retained.



Here is a close look at the parking brake attachment. The parking brake assembly comes with the handy mounting bracket for the cable.



The front and rear brakes were finished and they are ready for action. Before taking a test ride, the brakes were bled to get the air out of the line and then the pads were bedded. When that was done the owner took the car for a ride and he was extremely pleased with the braking improvement.

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