

STOPPING A FAT FENDER FORD

Installing Wilwood Brakes on a '40 Ford Chassis



The front brake kit part number 140-11017-DR features forged billet Dynalite four-piston calipers in a red powder coated finish, and they work with the 11-inch drilled and slotted rotors that were black E-coated for protection. This kit features an aluminum hub assembly with all of the necessary bearings and seals, and it also comes with the caliper brackets, the aluminum rotor to hub adapter, BP-10 Smart Pads, and all of the hardware required to finish the installation.

Wilwood Engineering is the leader in street rod brakes systems, because they are easy to install, they work great and they have a wide variety to choose from. The '40 Ford chassis in this story was started years ago, and then it sat for quite a while before it was taken to a street rod shop to be completed. This is a '40 Ford chassis, but the basic frame design with only minor changes was used under all Fords starting in 1935, so this story is relative to a wide variety of street rod build ups that are planning to use a Ford 8 or 9-inch rear differential and a Total Cost Involved Engineering front suspension system.



The rear brake kit part number 140-9282-D features forged billet Dynalite four-piston calipers in a red powder coated finish, and they work with the 12-inch drilled and slotted rotors that were black E-coated for protection. The kit also features an internal drum parking brake system that works with the rotor design and the parking brake also incorporates the caliper brackets. The kit also features the BP-10 Smart Pads, and all of the hardware required to finish the installation.

The chassis was updated with a rebuilt '60s Ford Mustang rear differential riding on a Total Cost Involved Engineering parallel leaf spring system. The front suspension was also modified with an early Total Cost Involved Engineering economy independent front suspension system. Street rod builders will tell you that the improvements done to this chassis are the easiest way to get a '40 Ford riding and handling like a brand new car. The owner of this car wanted it to be upgraded with the best parts available, and that included a better front and rear brake setup for improved safety. He plans to drive this car around town and on long trips to

rod runs in Southern California, so he wants it to stop like a brand new car. The rear brakes on this car were original Ford drum units that were in need of a complete rebuild, so instead of doing that it will be updated with a Wilwood Forged Dynalite Rear P-Brake Kit. The Total Cost Involved Engineering independent front suspension was originally equipped with GM brakes, so they will be removed and replaced by a Forged Dynalite Pro Front Kit. Both of these kits will work fine under the original style steel wheels he plans to use.

The front brake kit used on this chassis is part number 140-11017-DR and it features forged billet Dynalite four-piston calipers in a red powder coated finish and they work with 11-inch drilled and slotted rotors that are black E-coated for protection. The kit features aluminum hubs with all of the necessary bearings and seals, aluminum rotor adapters, caliper brackets, BP-10 Smart Pads, and all of the hardware necessary to finish the installation. The rear of the chassis features part number 140-9282-D and to get the front to match the rear, red Dynalite calipers were substituted for the standard finish. The rear features forged billet Dynalite four-piston calipers in a red powder coated finish and they work with 12-inch drilled and slotted rotors that were black E-coated for protection. The

rear brakes are equipped with Wilwood's internal drum parking brake system that also features the built-in caliper brackets. The kit also comes complete with the BP-10 Smart Pads and all of the hardware required to finish the installation. Note: Wilwood also makes an 11-inch rear kit with the internal parking brake system.

Wilwood Engineering recommends that 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 impact gun, an assortment of hand wrenches and sockets, a socket wrench, line-wrenches, an inch-pound and a foot-pound torque wrench. Before the installation begins, it would be a good idea to spread all of the components out so you can make sure that all of the parts are included in the kit. Check all of the items you have with the parts listed on the instruction sheet. We are going to show you the complete installation, so you can decide whether you want to install the system yourself, or have a professional do it for you. If you are a competent mechanic this installation can be done in a day.



This car is equipped with steel wheels and Ford hubcaps, so the caps had to be removed to access the lug nuts. The caps can be removed by prying the lip up with a large screwdriver.



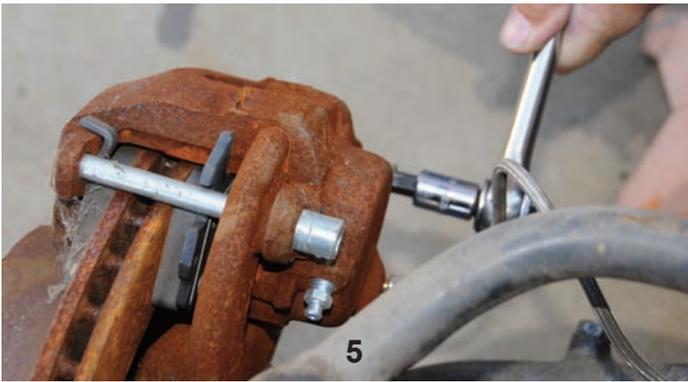
The lug nuts were disconnected with an impact gun that was outfitted with the correct size socket. Before the tires were removed, the chassis was elevated with a floor jack and then the frame was supported by large jack stands.



After the lug nuts were disconnected, the tires and wheels were removed from the chassis.



This chassis is running a Total Cost Involved Engineering economy front suspension system that was outfitted with GM brakes. It doesn't take long for the cast iron brakes to develop a strong coating of surface rust.



Using a socket wrench and an Allen head socket, the two large bolts that secure the caliper to the bracket were disconnected.



Here the two Allen head bolts are being removed from the bracket assembly.



There was enough rust on the rotor to make caliper removal difficult. Here a large screwdriver is being used to break the caliper loose.



After the caliper was loosened up, it was removed from the car. This would be a good candidate for the swap meet pile.



The line that runs from the caliper to the bracket on the frame was disconnected from the hard line.



Using a dust cap tool, the dust cap was disconnected from the rotor assembly to access the spindle nut.



The cotter key was straightened out and then it was removed from the hole in the spindle.



The spindle nut was disconnected with a large crescent wrench. Keep the parts because you will need them to finish the installation.



After the spindle nut was disconnected, the large flat washer and the small bearing were removed allowing the removal of the rotor.



The GM caliper bracket was removed next. Here the large upper nut is being removed with an impact gun.



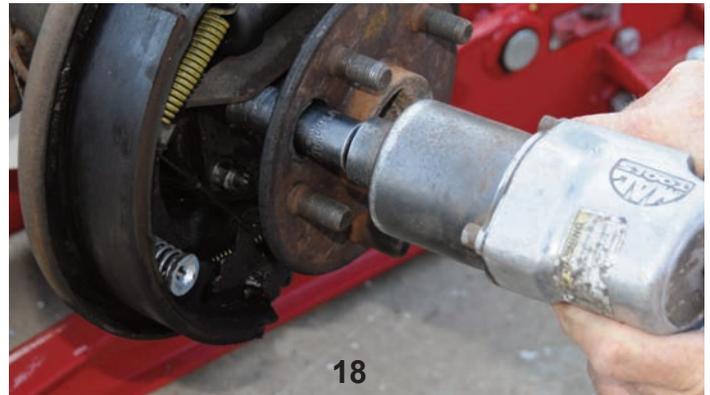
After the top bolt was removed, the smaller lower bolt was removed using an impact gun.



The drum was removed from the brake assembly. If the drum doesn't want to come off easily, you may have to back off the brake shoes.



Using a line wrench, the brake hose was disconnected from the wheel cylinder connection.



The four bolts that secure the brake backing plate and axle flange to the axle housing were removed with an impact gun.



After the bolts were removed, the axle could be pulled from the housing. Sometimes the axle will come out easily and sometimes you will need an axle puller.



The brake backing plate was pulled off of the axle studs. Keep the axle stud bolts because you will need them for re-assembly.



The axle was reinstalled into the housing and was totally seated with the bearing in place, so that the axle flange offset can be measured.



The offset was determined by measuring the face of the axle housing with the face of the axle. That measurement will determine the correct rear brake for the axle.



After the original brakes were removed, the chassis was sent to the sand blaster and the powder coater. When the chassis parts came back, it was time to install the new brakes. We started by coating the front brake installation bolt with Loctite 271.



The bracket bolt was screwed into the spindle finger tight to start with. Here the lower bolt and washer are being installed.



The upper bolt was coated with Loctite 271 and it was connected to the bracket finger tight.



After the upper bolt was started, it was tightened with a small socket wrench and then it was finished off with a large torque wrench. The bolt was tightened to 47 ft-lbs.



The lower caliper bracket mounting bolt was also tightened to 47 ft-lbs with a large torque wrench.



The outside threads of the lug studs were coated with anti seize and the inside toward the head was coated with Loctite 271.



A close look at the hub assembly shows two mounting holes. One is for the Chevy lug pattern and the other is for the Ford, Mopar and AMC lug pattern. Here the lug stud is being installed in the Ford pattern.



After the lugs are started into the hub assembly, an impact gun is used to seat the studs.



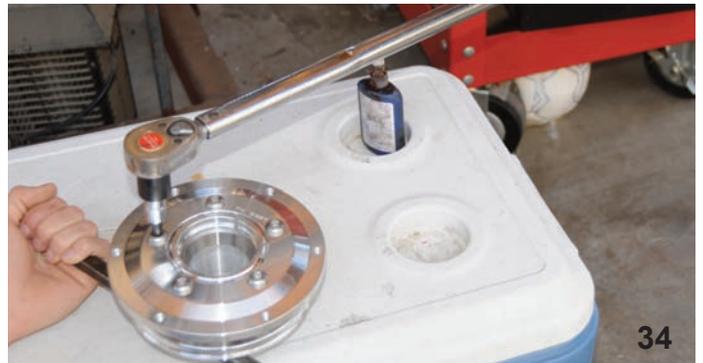
The next step is to bolt the hub assembly to the adapter plate. Make sure the plate is facing in the correct direction as shown.



The bolts for the adapter plate were coated with Loctite 271 before they were installed.



The bolts were hand tightened into the hub assembly and then they were tightened further with a small socket wrench and the appropriate socket.



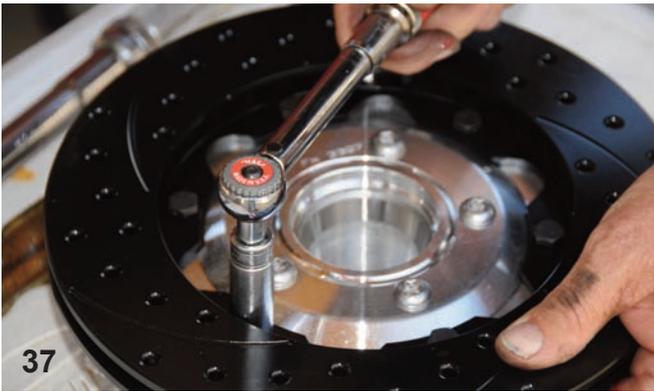
After all of the bolts were tightened with a small wrench, they were tightened again in an alternating sequence to 55 ft-lbs using a foot-pound torque wrench.



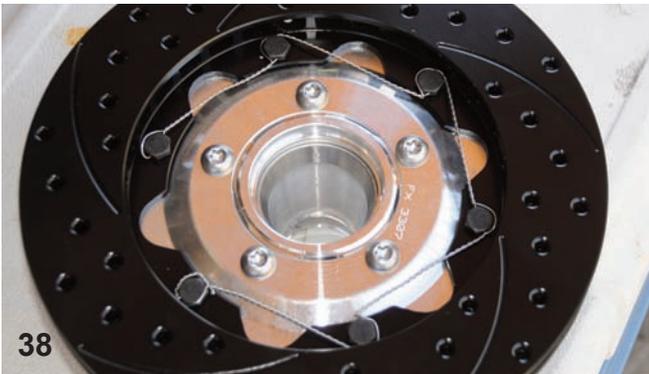
The rotor assembly was placed on the hub assembly and adapter plate, the bolt holes were lined up and then the rotor was ready to be attached to the adapter plate.



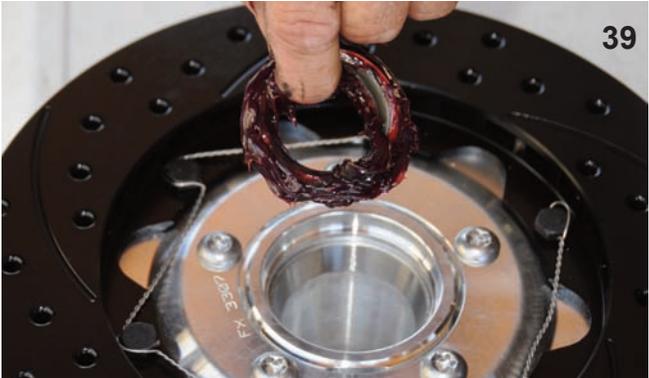
The rotor-to-adapter-plate bolts were coated with Loctite 271 and then they were screwed into the adapter plate.



After the bolts were in place, they were tightened to 180 in-lbs using an inch-pound torque wrench.



After the bolts were coated with Loctite they will probably not loosen up, but for extra protection this rod shop safety wired the bolts together.



The large bearing supplied in the kit was packed with grease before it was installed into the hub assembly. The bearing race comes installed in the hub assembly.



After the bearing was seated into the race, the grease seal was placed on the circumference of the hole.



Using a grease seal tool, the grease seal was pressed into the hole. All it takes is a couple of good hammer hits to get it seated.



The rotor was placed onto the spindle and then the small bearing and large flat washer were installed. After the rotor is seated, the spindle nut can be installed.



The spindle nut was tightened with a large Crescent wrench until the bolt was snug, but not too tight. Over tightening the nut can cause premature bearing failure.



After the spindle nut was snug, the castle nut cover was installed over the nut and then a cotter key was inserted to keep the nut in place.



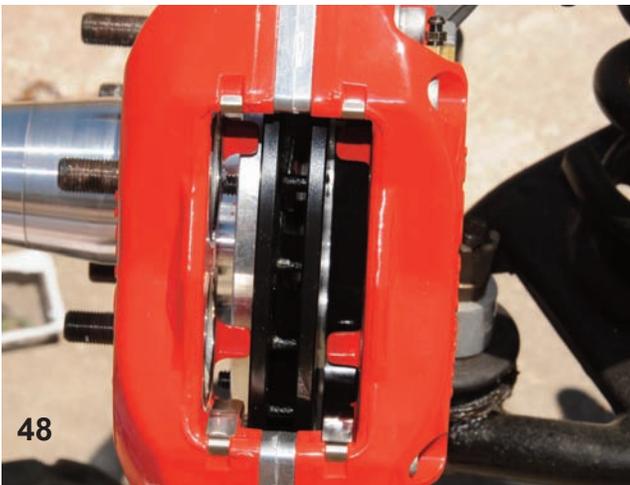
The hub assembly was finished off with the attractive Wilwood dust cover as seen here.



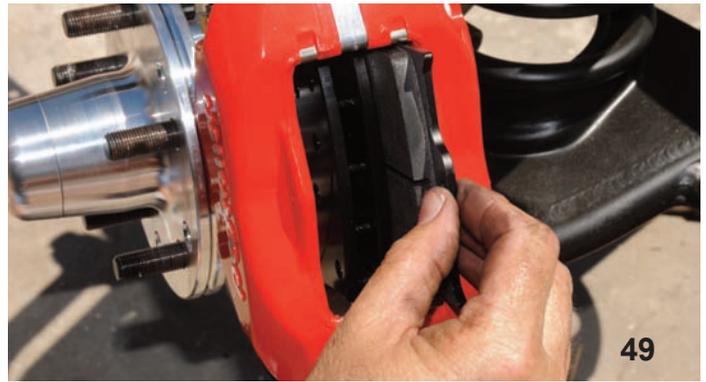
A washer was installed on the caliper bolt and then the bolt was coated with Loctite.



The bolt was placed through the caliper and then it was loaded with two shims. This was done on the top and bottom hole.



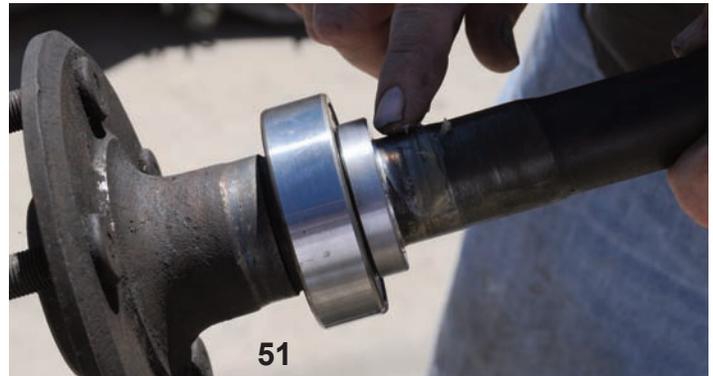
The caliper nuts were tightened and here we see that the caliper is centered perfectly over the rotor.



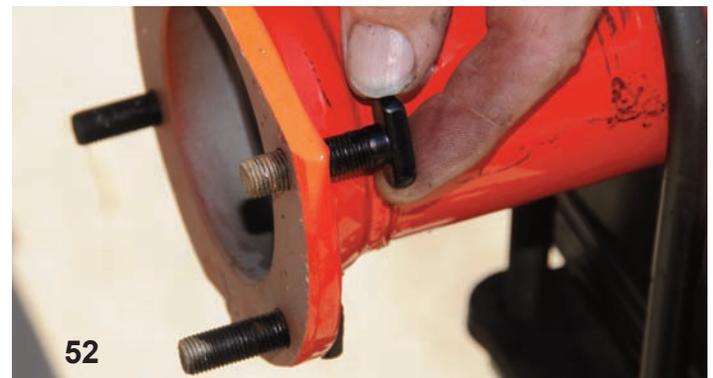
The brake pads were installed into the rotor assembly. Loading brake pads from the top makes them easy to change when they wear out or when you go to the track and want a different compound.



The brake pads are secured into the caliper with this long cotter key.



When the rod shop that is doing this installation disassembled the differential it was prudent to remove the old axle bearings and install new ones. Here the new bearing can be seen while the area just behind it is being coated with grease.



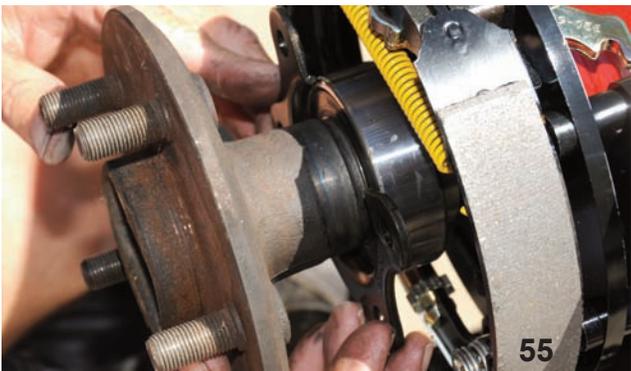
The T-bolts were inserted into the axle housing in preparation for installing the parking brake assembly.



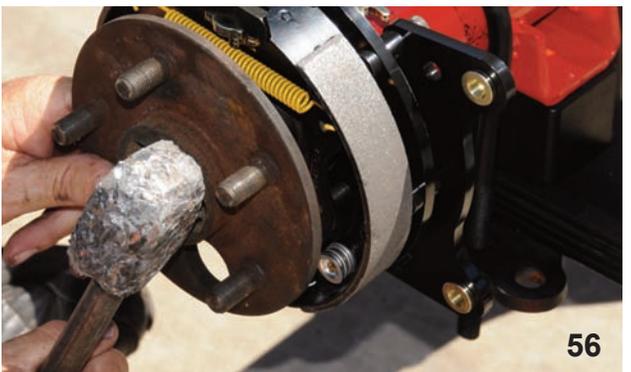
Here the parking brake assembly is being installed over the four T-bolts. Notice that the caliper bracket is part of the parking brake assembly.



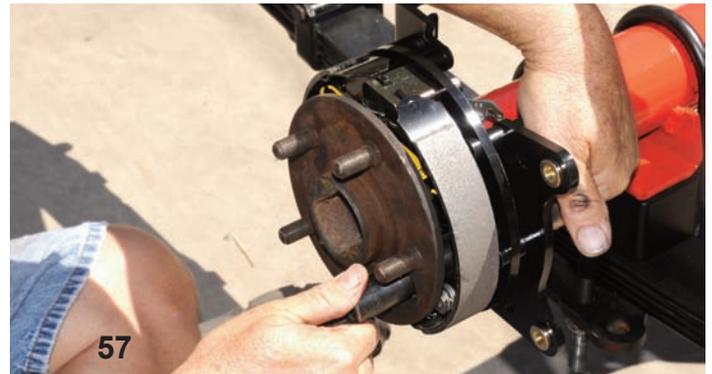
The axle was reinstalled into the axle housing as seen here.



A close look reveals the small bearing retainer clip that has to be installed to keep the axle and parking brake mechanism in place. It should be lined up over the four T-bolts.



When all of the parts are lined up properly, the axle can be tapped into place with a hammer to seat the bearing.



Using a socket, the T-bolt nuts were screwed on one by one. They were installed as tight as possible by hand first.



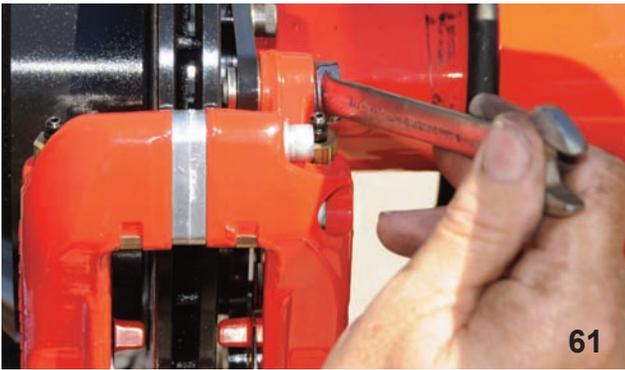
After the nuts and bolts were secured, the nuts were tightened with an Impact gun as tight as possible.



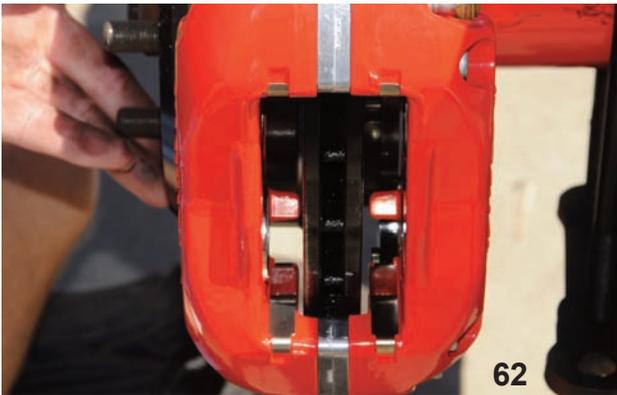
The rotor was placed over the parking brake assembly and then it was secured with a couple of lug nuts.



The caliper bolts were placed through the hole in the caliper and then the bolt was installed. Here one shim is being loaded on the bolt.



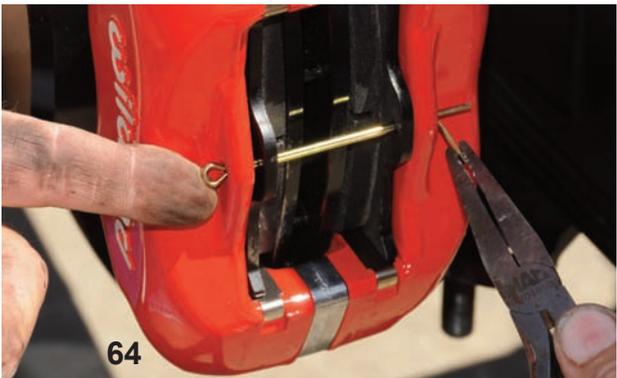
The caliper was placed against the bracket and then the bolts were connected. Here one bolt is being tightened with a 9/16-inch wrench. This was repeated on the lower caliper bolt.



Here is the caliper perfectly centered over the rotor assembly.



The brake pads were installed into the Dynalite caliper and they were a perfect fit.



The brake pads were secured to the rotor with this long cotter key. Here the end is being bent over to keep it in place.



Here is the finished front brake ready for bleeding and bedding. This system looks great with the red Dynalite calipers and we were told the car is going to be painted a matching red color.



The rear system looks great and it features a Dynalite caliper that matches the front caliper for a balanced appearance.

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