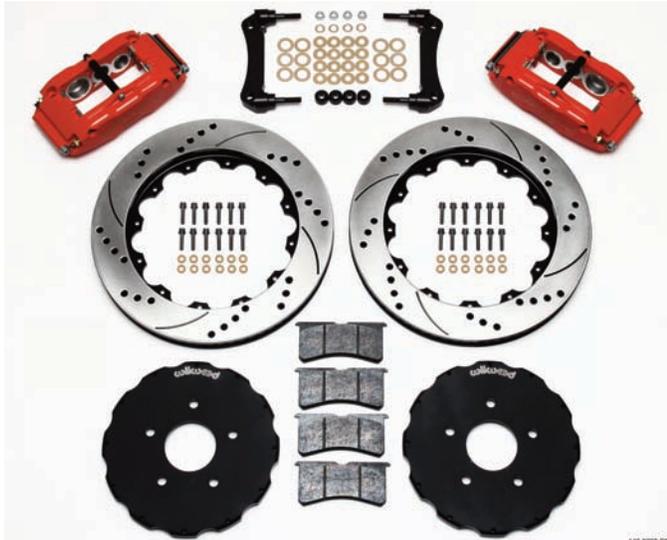


# STOPPING A TRACK STAR

Installing Wilwood Superlite brakes on a strong running C5 Z06 Corvette



The front Corvette upgrade kit with the red calipers and drilled and slotted rotors is part number 140-8230-DR. The kit features Superlite 6R forged billet six-piston calipers in red finish, and they work with the 14-inch drilled and slotted rotors that are black E-coated for protection. The kit comes with aluminum rotor adapters, aluminum caliper brackets, BP-10 Smart Pads, and all of the hardware required to complete the installation.



The rear Corvette upgrade kit with the red calipers and drilled and slotted rotors is part number 140-9119-DR. The kit features forged billet Superlite 4R four-piston calipers in a red finish and they work with the 14-inch drilled and slotted rotors that are black E-coated for protection. The kit comes with aluminum rotor adapters that work perfectly with the OE parking brake mechanism. The kit also comes with the aluminum caliper brackets, BP-10 Smart Pads and all of the hardware required to complete the installation.

Engine horsepower certainly has increased over the years, and with today's computer technology there are some extremely powerful cars on the market that not only have horsepower figures far exceeding the muscle cars of old, they also provide excellent fuel efficiency and are emissions compliant. The Corvette engineers were certainly aware of what they have achieved with the standard Corvette engine, so a few years ago they wanted to introduce the ultimate Corvette for the street and the track. The engineers based their ultimate performance car on the Corvette coupe, which is the lightest Cor-

vette available, and then upgraded it with an aluminum frame along with the standard aluminum suspension parts to make it even lighter. The Corvette engineers also increased horsepower by installing a larger displacement engine that was producing 405 horsepower in the special Corvette. It's important to remember that in the muscle car era horsepower was rated at gross figures. Today we are rating the horsepower at the lower net figures so that 405 horsepower engine is actually producing more gross horsepower than any of the old big-block 427 engines used in the

late '60s and early '70s, plus instead of getting 6 miles per gallon, the new Corvette engines are getting over 20 miles per gallon, even if you have a heavy right foot. It is actually pretty amazing when you think about it.

Henry De Los Santos, the editor of Chevy High Performance Magazine, has a 2002 Z06 Corvette that he drives to work every day and also takes it to track events as often as possible. He has noticed that the Z06 brakes, which were an upgrade, weren't up to his driving skills on the track, so he contacted Wilwood Engineering to find out if we had brakes that could help his Corvette perform even better. He was informed that we have track proven brakes that would easily outperform his original brake system. The front kit that works perfectly on the C5 Corvettes is part number 140-8230, but in this case red calipers and drilled and slotted rotors were desired so the kit is part number 140-8230-DR. The upgraded brake kit feature Superlite 6R forged billet six-piston calipers with a red finish working together with 14-inch drilled and slotted rotors in the black E-coated finish. The kit comes with aluminum caliper brackets, aluminum rotor adapters, BP-10 Smart Pads, and all of the hardware required to finish the installation. The rear improvement kit is part number 140-9119 in standard form but with the red calipers and drilled and slotted rotors it is part number 140-9119-DR. This kit features forged billet Superlite 4R four-piston calipers that are working together with 14-inch drilled and slotted rotors in the black E-coated finish. The kit features aluminum rotor adapters that are designed to work with the OE parking brake

mechanism. The kit also comes with aluminum caliper brackets, BP-10 Smart Pads, and all of the hardware needed to make the changeover. The calipers also require new brake hoses so the Wilwood front braided steel brake hoses are part number 220-8176 and the rear braided steel hoses are part number 220-9101

Henry ordered the parts and they were installed at the Wilwood tech center in Camarillo, California by the chief technician, Tony Porto. Tony did one side first to find the correct amount of shims needed to get the caliper centered over the rotor, so on the side that we photographed the same shim arrangement was used. 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 standard and metric wrenches, line wrenches, standard and metric sockets, a socket wrench, and an inch pound and 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.



Using the appropriate size socket and an impact gun, the lug nuts were disconnected.



After the lug nuts were disconnected, the wheels and tires were removed. Here Tony is lifting the tire off of the lug studs.



The Z06 comes with improved brakes that work good on the street, but an improvement is needed on the track where the brakes get hot and fade.



Using an impact gun and the appropriate size socket, the caliper bolts were removed. Here the top bolt is being disconnected.



After the bolts were disconnected, some friendly persuasion was needed to remove the calipers. There was a wear lip at the edge of the rotor that made removal more difficult.



The caliper was removed and here is the stock rotor. You can tell that these brakes have been used hard because there is a wear ridge at the edge of the rotor from years of street and track use.



After the caliper was removed, the rotor could be lifted off of the studs. Sometimes you have to tap the back of the rotor to get it off of the centering ring.



The hub assembly was cleaned with a wire brush to remove dirt and rust deposits.



The original caliper mounting bolts were coated with Loctite 271 prior to installation. Notice that the original bolt and flat washer were reused.



The bolts were inserted into the caliper mounting ears, and then two shim washers were installed that will sit between the mounting ear and the caliper bracket.



The caliper bracket was carefully placed against the caliper mounting ears and the bolts were screwed into the bracket holes finger tight.



The bracket was tightened with a small socket wrench first and then the final tightening was done with a torque wrench. The bolts should be tightened to 65 ft-lbs.



The mounting studs for the caliper were loaded with two shim washers and a 0.42-inch long spacer.



The rotors have to be assembled next. Tony placed the rotor on top of the rotor adapter, aligned the holes, placed the flat washers in place and then he coated the mounting bolts with Loctite 271 and screwed them into the adapter one by one.



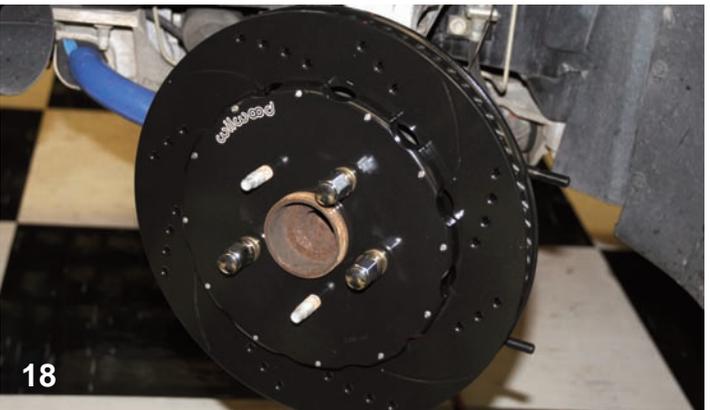
After the bolts were coated with Loctite, they were screwed into the rotor adapter finger tight.



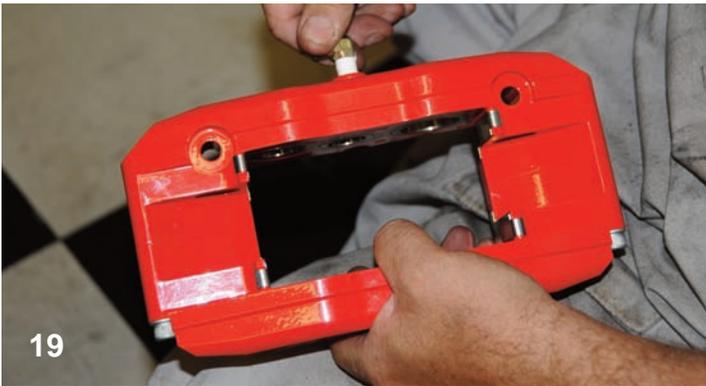
Using a small impact gun, the bolts were tightened to the rotor using an alternating sequence.



After all of the bolts were installed and were snug, they were tightened to 85 in-lbs using an inch pound torque wrench.



The finished rotor was placed over the studs and then it was pushed back until it seated on the centering ring. Three lug nuts were used to hold it in place.



19 The caliper inlet fitting threads were covered with PTFE Thread Tape and then it was screwed into the side of the caliper.



23 The caliper mounting nuts were tightened with a small socket wrench first.



20 A look inside of the caliper shows that this unit was outfitted with Thermlock pistons, which are designed for high temperature track use.



24 After the caliper mounting locknuts were snug, they were tightened to 35 ft-lbs using a foot-pound torque wrench.



21 The calipers were installed into the studs and then the washers and locknuts were installed.



25 The caliper bridge bolt was installed to hold the brake pads in place. Here the bolt is being secured finger tight.



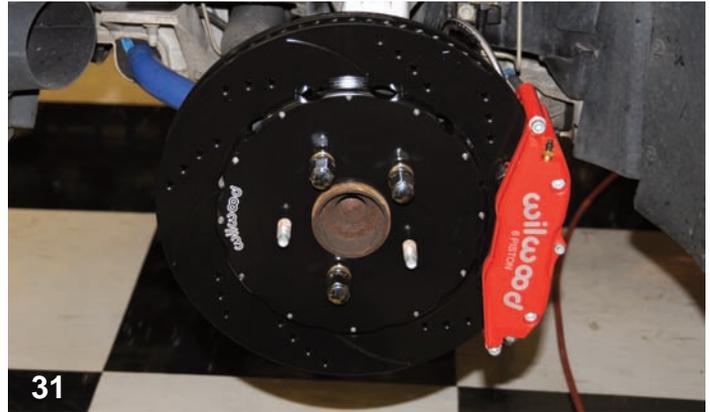
22 The brake pads were installed into the caliper as seen here. Notice the lettering on the brake pads that indicate the pad number. This number should be used when new pads have to be ordered.



26 Using an Allen T-handle and an open-end wrench, the bridge bolt was tightened. A locknut is used to keep the bolt in place.



Using a line wrench, the hard line to flex line connection was broken loose prior to removal.



Here is the finished front Superlite 6R caliper ready for bleeding and bedding. After the bedding process is complete, the rotor face will be cleaned to shiny steel. The rest of the rotor that doesn't come in contact with the pad will remain covered with the black E-coating.



The spring clip that secures the flex line to the mounting bracket was disconnected.



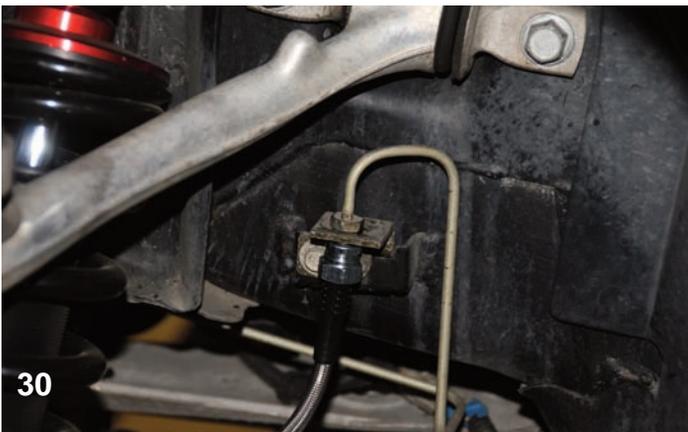
Using an impact gun and the appropriated size socket, the lug nuts were removed from the lug studs.



The Wilwood part number 220-8176 braided steel flex line was connected to the caliper inlet fitting using a line wrench.



Here we see Tony removing the tire and wheel from the car so the brakes can be accessed.



The other end of the braided steel Wilwood flex line was connected to the bracket and the original Corvette hard line.



Using an impact gun and the appropriate size socket, the caliper bolts were disconnected.



35 After the bolts were disconnected, the caliper was removed from the assembly.



36 After the caliper was out of the way, the rotor was removed from the rear hub assembly.



37 After the rotor was removed, you can see the internal parking brake assembly. The Wilwood rotors were designed to work with this system.



38 The original caliper bolts were reused and here they are being coated with Loctite 271. The original flat washer should also be retained.



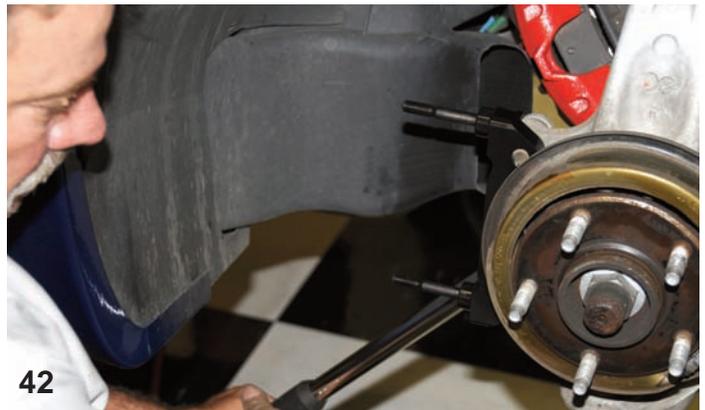
39 The original bolts were reinstalled into the mounting ears and a shim washer was installed. Adding or subtracting shims can be used to center the caliper over the rotor.



40 The bolts were screwed into the bracket and then they were tightened with a small socket wrench. Here the bottom bolt is being tightened.



41 The upper bolt was also secured with a socket wrench as seen here.



42 After the caliper bracket bolts were secured, they were tightened to 65 ft-lbs using a foot-pound torque wrench.



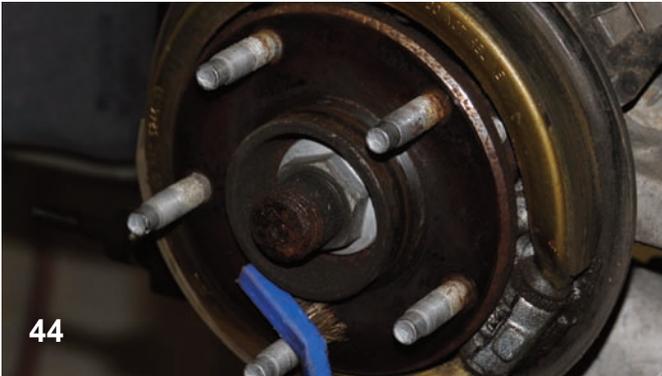
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After the caliper bracket was in place, it was loaded with four shim washers and a 0.470-inch long spacer ring.



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After all of the bolts were snug, they were tightened to 85 lbs using an inch-pound torque wrench.



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The hub face was cleaned off with a wire brush to make sure the rotor will seat properly.



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The rotor was aligned on the studs and then the rotor was pushed back until it was resting on the centering ring.



45

The rotor was placed on the hub adapter and then the washers were installed followed by the small bolts. All of the bolts were coated with Loctite 271 before they were screwed into the rotor adapter.



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The rotor was tightened to the rear hub assembly using three lug nuts. Now the caliper to rotor adjustments can be made accurately.



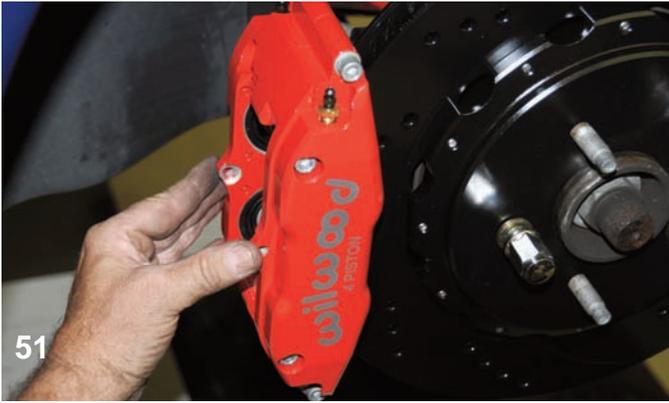
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After the bolts were screwed in place, they were tightened in an alternating sequence using an impact gun.



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The caliper inlet fitting threads were coated with PTFE Thread Tape and then it was screwed into the caliper body.



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The caliper was installed on the bracket studs and then the washers and locknuts were installed to hold it in place.



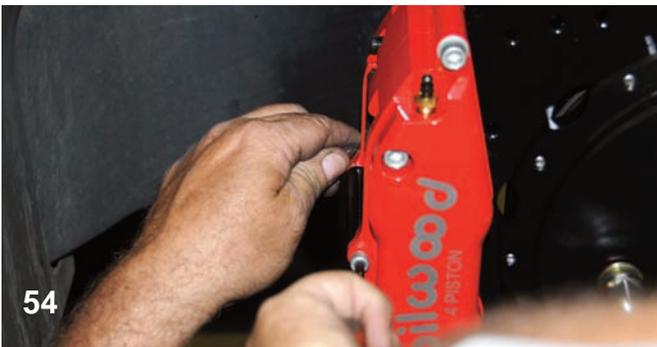
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The caliper to rotor centering was perfect so the brake pads were installed. If you have a difficult time when you try to install a brake pad, it is probably because the caliper isn't centered properly.



53

After the caliper pads were installed, the lock nuts were tightened to 35 ft-lbs using a foot-pound torque wrench.



54

The bridge bolt was installed and then the lock nut was tightened with an open-end wrench and an Allen T-handle.



55

The Wilwood braided steel brake line part number 220-9101 was connected to the caliper inlet fitting. Here it is being tightened with a line wrench.



56

The other end of the Wilwood braided steel line was connected to the Corvette hard line. The line is held in place with the spring clip shown here.



57

Here is the finished rear brake system ready for bleeding and bedding. The rear brake uses a Superlite 4 four-piston caliper and a 14-inch rotor for perfect front to rear brake bias.



58

Here is the finished brake assembly that can easily be seen through the spokes in the Corvette custom wheels. After the bedding process, the steel rotor face is shiny and the rest of the rotor remains black E-coated and it gives the brake assembly a very nice appearance.



Here the rear brake assembly is finished and bedded in. The rear Superlite 4R calipers and 14-inch rotors match the front brakes adding to the aggressive appearance of the Corvette.

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