

EVOLUTION SOLUTION

Stop your Mitsubishi with Wilwood Engineering's racing-proven lightweight disc brakes



The Wilwood Engineering part number 140-9285 front brake kit comes with 14-inch diameter slotted rotors, aluminum hat adapters, Billet Narrow SL6 Radial Mount six-piston calipers, aluminum caliper brackets, BP-10 Smart Pads, and all of the hardware required to finish the installation.

The Wilwood Engineering part number 140-9286 rear brake kit comes with 12.90-inch diameter slotted rotors, aluminum hat adapters for internal parking brake, Dynapro Big Brake four-piston calipers, aluminum caliper brackets, BP-10 Smart pads and all of the hardware required to finish the installation

The Mitsubishi Lancer Evolution was designed with World Rally Car Racing in mind. The car started out for the Japanese market and it featured a 2-liter turbocharged engine and all wheel drive suspension, so it provided fantastic handling. The "Lancer" name is a carryover from Chrysler when Mitsubishi and Chrysler were producing cars together for many years. The evolution or "Evo" as it is called was designed for racing and it continues to compete in the World Rally Car Races. The Evolution was released for the Japanese market, but when rally car enthusiasts saw how well the car performed they wanted one and soon the cars were individually imported into other countries such as the United Kingdom where Rally Racing was extremely popular.

Mitsubishi saw what was happening, so they broadened their market to other countries where Rally Racing was popular. The Evolution went through several generational changes over the years and today the company is at Generation X. The company didn't export the Evolution to the United States because Rally Racing wasn't popular, at least with the older buyers. When Subaru finally released their Rally Racer, the Impreza WRX in the United States, the younger generation of Americans became interested in a little foreign car that was affordable, handled well and had plenty of power for a small engine. Gone too was the stigma held by older Americans who felt that a

sports car didn't have four-doors. The younger generation grew up with the popularity of four-door cars so that didn't seem to bother them. When the Subaru started becoming popular in the U.S., Mitsubishi noticed their success, so the 8th generation Lancer Evolution was released in the U.S. in 2003. The Evolutions were getting better from one generation to the next, so by the time the car hit the U.S. market it was a very stout performance car.

The fellow who purchased the 2004 Evolution in this story was looking for improved performance on the street and on the track, so he wanted the ultimate in braking power. The brakes that came with the car were pretty good, but they were heavy, so the owner knew that race proven brakes that were lighter and could stop the car better without fade would be an improvement. He was also aware that being lighter they would also help the car's handling ability. The owner contacted Wilwood direct because a brake improvement kit wasn't available at the time, so Wilwood brought the car into the company's tech center in Camarillo, California to help them engineer a brake kit for the Evolution. Today Wilwood Engineering does offer brake improvement kits part number 140-9284 and 140-9285 for the Evolution. The 9284 kit is designed for 13.06-inch diameter rotors and the 9285 kit is designed for 14-inch diameter rotors. Both use the super -

strong Billet Narrow SL6 Radial Mount six-piston caliper. A kit was also developed for the rear brakes and it is kit number 140-9286 and it features a 12.88-inch rotor and a Billet Dynapro four-piston caliper. Two hose kits were also developed and the front is part number 220-9287 and the rear is part number 220-8806.

This kit was developed and installed at the Wilwood Tech center in Camarillo, California by Tony Porto. The only change you will notice is this car received front and rear brakes, but because of development time, the original-style rear rotors were used for this installation while the new aluminum hat rotors were being finished. Today the rotors are finished and are ready for use so all of the kits are ready for shipment. If you are going to upgrade your Mitsubishi with Wilwood brakes, Wilwood 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 the installation you will need a floor jack and jack stands, an assortment of metric wrenches and sockets, line wrenches, a ratchet wrench, an impact gun and a foot-pound and inch-pound torque wrench.

Before the installation begins it would be a good idea to spread all of the parts out so you can make sure that all of the parts are included in the kit. Check the components with the parts list on the instruction sheet to make sure everything is there. 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 on hand. We will show you the entire installation so you can decide whether you can do the work yourself, or if you should have a professional do it for you.



A floor jack was used to elevate the car and then it was placed on jack stands. Using an impact gun and the correct size socket the lug nuts were disconnected and the wheels and tires were removed.



Using a breaker bar and the correct size socket, the two bolts securing the caliper to the bracket were disconnected.



Here are the front brakes that come standard on the car. The Brembo brakes are better than what you will find on other Mitsubishi products but they are heavy and the car's stopping power and handling can be improved.



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



The next step was removing the rotor from the assembly. It may take a little persuasion to get the rotor to separate from the hub assembly.



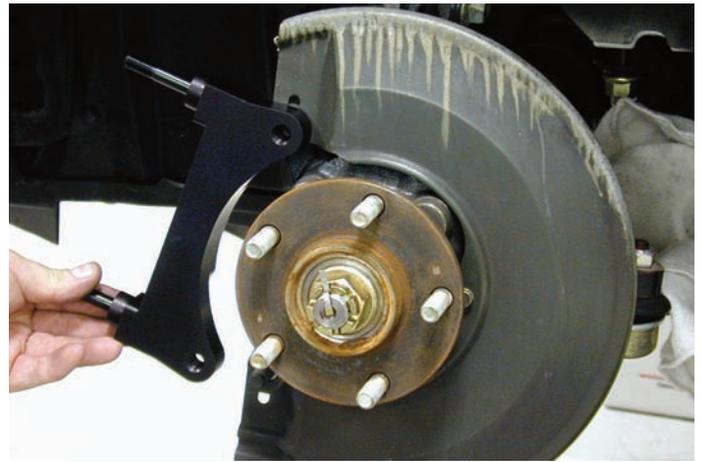
After the rotor was removed you can see the dust shield and the two original caliper mounting ears. The Wilwood caliper bracket will connect to the mounting ears.



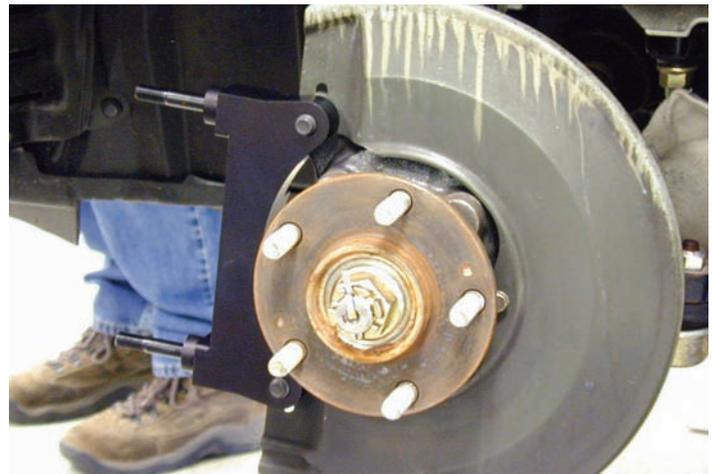
Using a line wrench, the hard line was disconnected from the flexible line. This bracket will also be used to mount the Wilwood brake hose.



After the original hose was disconnected, the Wilwood adapter fitting was installed and clipped in place. The fitting that is connected to the adapter keeps it plugged until the hose can be installed



Here is the caliper mounting bracket being checked for fit. The bracket will bolt to the original caliper mounting ears.



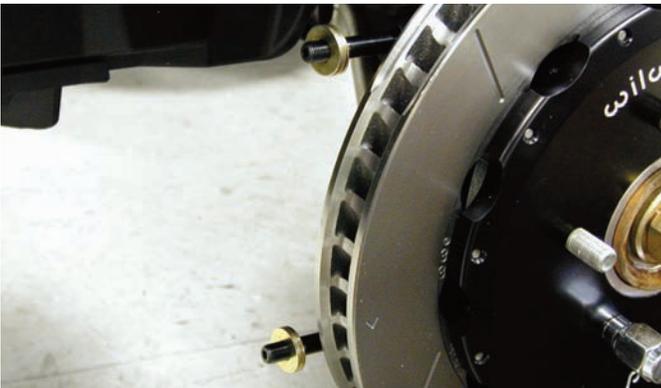
The bolt and 0.063-inch thick washer was placed through the mounting ears and then it was loaded with a 0.033-inch thick and a 0.015-inch thick washer before it was bolted to the bracket. Shims can be used between the bracket and the mounting ears if rotor centering is required.



After the bracket was in place, the rotor was lifted and placed on the hub assembly as seen here. The aluminum hat was connected to the rotor using the bolts and washers in the kit. The bolts were coated with Loctite 271 and then they were tightened to 85 in-lbs in an alternating sequence using an inch-pound torque wrench.



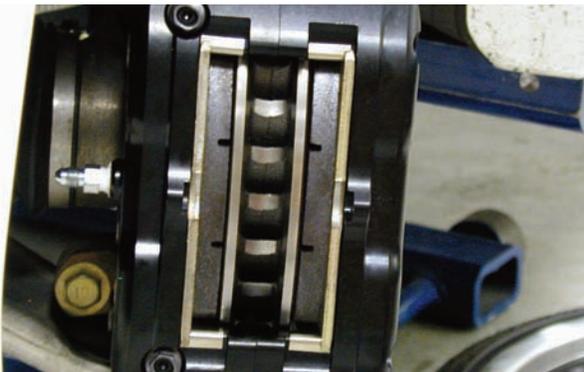
Two lug bolts were used to secure the rotor to the hub assembly so the rotor to caliper centering could be determined.



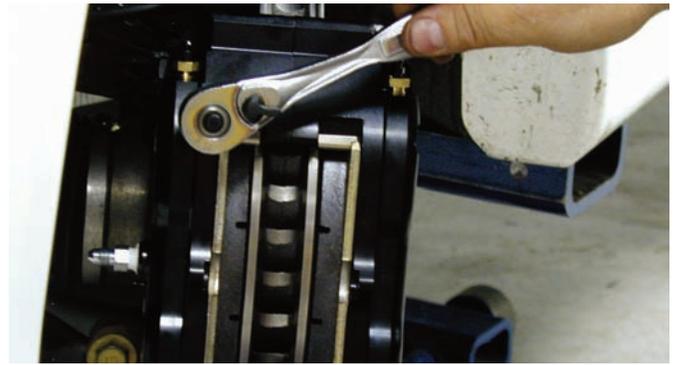
The caliper mounting bracket studs were loaded with a 0.47-inch long spacer and a 0.035-inch thick shim washer before the caliper was installed.



The caliper inlet fitting was wrapped with Teflon tape and then it was screwed into the side of the caliper as seen here. This also gives you a chance to see the six pistons in the caliper. It would be good to note that six-piston calipers are marked right and left.



Here is the caliper after it was mounted and as you can see the rotor is centered perfectly. Notice that the radius of the brake pads matches the radius of the rotor assembly.



Using a small socket wrench, the two 3/8-24 self-locking hex head nuts were tightened. A 0.057-inch thick washer was used under each nut.



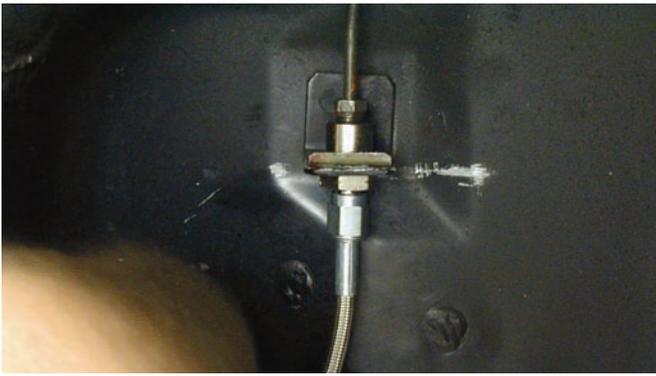
After the two self-locking nuts were snug, they were tightened to 35 ft-lbs using a foot-pound torque wrench.



The caliper bracket mounting bolts were coated with Loctite 271 and then they were tightened to 100 ft-lbs using a foot-pound torque wrench.



Here is the finished brake assembly ready for the brake hose installation. The brakes will work great and they also look nice.



The cap was removed from the adapter fitting and then the braided steel line was connected.



The original mounting bracket for the hose was reused to keep the line away from moving parts.



The bridge bolt was installed in the caliper and then it was tightened with an open-end wrench and an Allen T-handle.



Here is the finished brake system after the large diameter wheels were installed. The large windows certainly gives onlookers a good view of the brakes being used on the car.



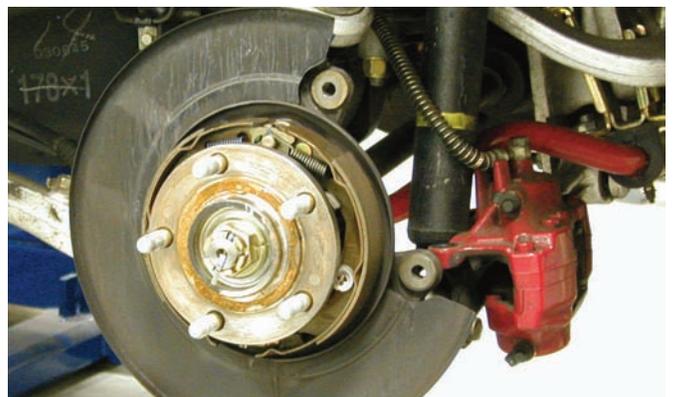
The front of the car was lowered after the jack stands were removed. The rear of the car was elevated and jack stands were carefully placed under the car. Now the rear wheels and tires were removed as seen here.



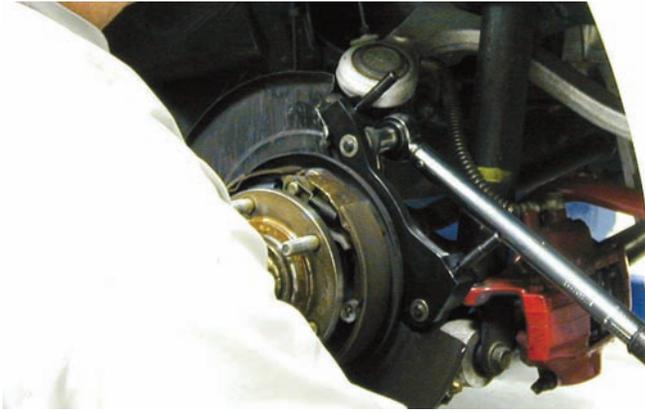
Using a breaker bar and the correct size socket the two bolts securing the original caliper were loosened.



After the breaker bar loosened the bolts, they were removed with a smaller socket wrench as seen here.



After the caliper was disconnected, the rotor was removed and that shows the original internal parking brake mechanism. Here you can also see the two caliper mounting ears that will be used to mount the Wilwood caliper bracket.



The caliper mounting bracket was secured to the two mounting ears with the bolts and washers supplied. The 35mm bolt was loaded with a 0.095-inch thick lock washer and a 0.020-inch thick shim washer was used between the bracket and the mounting ears. After the caliper to rotor centering was correct, the bolts were coated with Loctite 271 and they were tightened to 35 ft-lbs.



The old hose was removed from the hard line and new the new flex lines were installed.



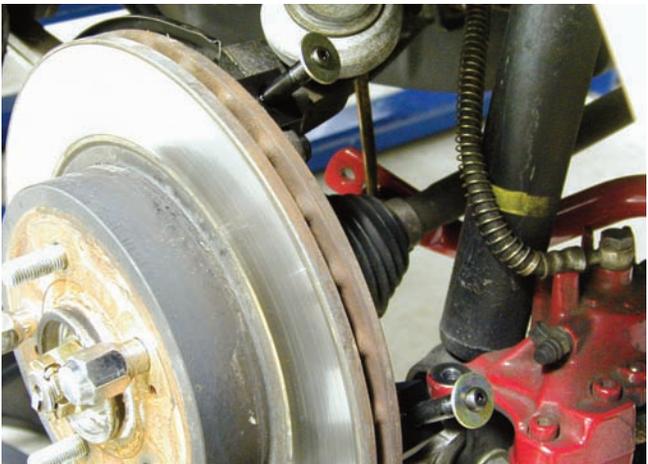
After the caliper was installed and the rotor was centered, the 0.057-inch thick washers were installed and the 3/8-24 self-locking hex head nuts were tightened to 35 ft-lbs.



Since this is the prototype car for this installation kit, the original style rear rotors are being used while the aluminum hat rotors are being developed. Here the rotor is connected to the hub with a pair of lug nuts.



The rear brakes are finished and now the car is ready for brake bleeding and pad bedding. This system works terrific and the owner said the car performs great on the street and even better on the track.



A close look reveals a pair of 0.035-inch thick washers were installed, one on each stud before the caliper was installed.

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