

HAULTING AN ACURA

Installing rear disc brakes on a '91 Acura Integra

The Honda brand has been in the United States since 1959 when the first Motorcycle dealership was opened. The company originated in Japan after World War II when gasoline was being rationed and the economy was rebuilding. Soichiro Honda was interested in and was working on motor vehicles before the War, and when it concluded he saw the need for low cost transportation. He heard about a company that was making small two-stroke industrial engines for the war effort and after the war the engines were going to be scrapped or sold in bulk, so Soichiro purchased the little engines for a small sum and started adapting them to bicycle frames. He modified the engines to be able to run on gasoline, turpentine or a combination of both. The motorized bikes sold well and before long he started running out of his supply of engines, so he decided to make his own engine based on the one he purchased.

In 1948 he opened up Honda Motor Company and started producing motorbikes with stamped steel frames and front and rear suspensions. Over the years the Honda motorcycle developed into a wide variety of models from little scooters to full size motorcycles. After Honda's U.S. introduction in 1959, the dealership network started expanding and the Honda scooters and motorcycles started becoming the transportation of many college students and others who needed cheap transportation. In Southern California some Honda dealerships would rent the scooters for the day and that worked out well until too many unqualified riders got into accidents and the liability problems started growing. The dealerships

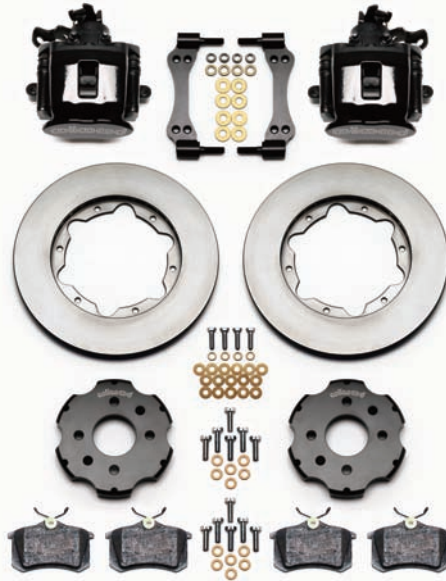


stopped renting the scooters but there were enough buyers for the low cost scooters to keep the dealerships profitable.

The interest in Honda motorcycles was energized when a 1964 singing group (that sounded a lot like the Beach Boys) the Hondelles had a hit song "Little Honda" with the following Lyrics, "It's not a big motorcycle, just a groovy little motorbike." Before long everyone wanted a Honda Super Cub motorbike and it quickly became the top selling motorbike of all time. Thanks to the hit song, it didn't take long for Honda to become a familiar name in America. Along with the groovy motorbike, Honda was also building some larger motorcycles that were expertly engineered and had some very powerful engines.

The most famous of the early bikes was the four-cylinder Honda 750s that were fast and it was the first time the name Superbike was used to describe it. Mechanically the Honda engines featured an excellent design and superior quality and that became a hallmark of the Honda brand.

The motorcycles were a big success and Honda made a name for itself in the United States but Soichiro Honda wanted to build a car. That became a reality in Japan in the late '60s and in 1970 he started importing them into the United States. The N600 was an extremely small car with a motorcycle style engine and chain drive. The small car had a difficult time sparking interest in the U.S. and after driving one I know why. The car probably did well in Japan because there wasn't much to compare to, but in the U.S. the cars were built better and were far superior to the



The rear brake kit used on this '91 Acura is part number 140-10206 and it consists of a pair of (CPB) Combination Parking Brake calipers, 11-inch rotors with aluminum hub adapters, caliper brackets, BP-10 Brake pads and all of the hardware required to complete the installation.

Honda. Of course one always has to take in the cheap factor of many Americans, because there are always people who don't care what they drive as long as it doesn't cost much and it will get them to work and back. Let's just call them the non-car enthusiast men and women. Although the market was small, people did by the little car for utilitarian use.

The first Hondas were pretty bad by all standards, but the company was a quick learner and a few years later they came out with an improved Honda Civic that was still small but larger than the original import. The Civic was a front wheel drive car making it smoother and quieter than the original Honda and it was very fuel-efficient. This car was introduced in 1973, about the same time as the oil embargo, so that certainly helped sales. In 1976 the Civic was joined by the Accord and the Honda brand cars became a favorite of young economically minded working men and women and college students. The Honda's ran well, the engines were always very fuel-efficient and they were also very dependable and that's the marketing theme that was used on all Japanese cars.

Honda has come a long way since 1970 and the cars they are building today have dependable engines, nice body designs and retain their original reliability. Honda also came out with an upscale Honda when they introduced the Acura model line and it quickly became a success because it was more luxurious, had improved handling and were offered with a more powerful engine. The fellow who owns the '91 Acura Integra in this story is a Wilwood employee who drives the car on the street for daily transportation and takes it to the

track on occasions, so he wanted to improve the brakes to keep up with the car's improved suspension. The front brakes that were installed on the car were a Wilwood Engineering one-off creation but the rear brakes were a standard off-the-shelf kit that fit both the Acura and Honda models. Wilwood kit number 140-10206 features 11-inch vented rotors and (CPB) Combination Parking Brake Calipers. He also used a Wilwood part number 220-10840 Flexline Kit and a 330-10966 Parking Brake Cable Kit.

This rear brake kit was installed at the Wilwood Tech Center in Camarillo, California by the head technician, Tony Porto. 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 knowledge and ability, car building experience and a good assortment of tools. The installer will need a floor jack and jack stands, an impact gun, metric wrenches and sockets, line wrenches, a three-inch cut-off wheel, an inch-pound torque wrench and a foot-pound torque wrench. It would be advisable to spread the kit components out to make sure you have all of the parts listed in the instruction sheet. It would also be handy to have a few other items such as a bottle of Loctite 271, a roll of Teflon tape, and a few bottles of Wilwood Hi-Temp Racing Brake Fluid or Wilwood EXP 600 Plus Hi-temp Racing Brake Fluid. We are going to show you how this installation is done so you can decide for yourself if you can perform this installation or if it would be better to have a professional do it for you.



The Acura was elevated with a floor jack and then jack stands were placed underneath it for safety. The correct size socket was found for the lug nuts and then they were disconnected with an impact gun. After the nuts were disconnected, the wheels and tires were removed.



Here is the Honda/Acura rear brake system after the wheels and tires were removed. This car uses a mechanical parking brake mechanism.



Using a screwdriver to release it, the clip that fastens the parking brake cable to the caliper was disconnected.



The clevis pin was also disconnected from the parking brake cable to the arm on the caliper.



The cable was disconnected and it was pulled out of the housing in preparation for removing the caliper.



The clip that fastens the brake hose to the rear hub assembly was disconnected with a socket wrench and the appropriate size socket.



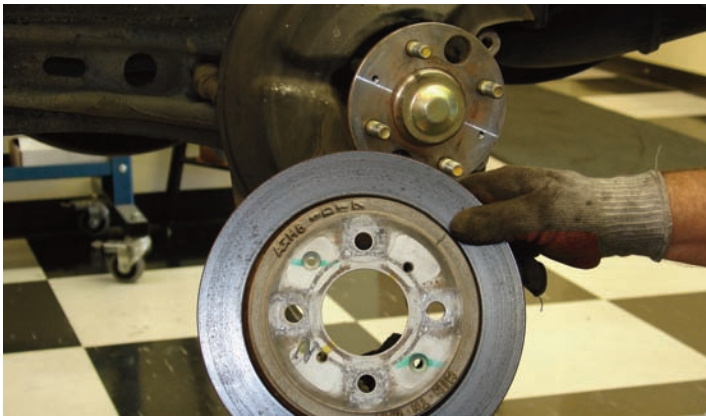
The two caliper bolts that secure the caliper to the mounting ears were disconnected with a socket wrench and the appropriate size socket.



After the caliper bolts were disconnected the caliper was removed from the hub assembly. Here the hose is still connected to keep the fluid from leaking out.



Using an impact screwdriver, the screws that secure the rotor to the hub assembly were removed. It would be a good idea to keep the screws for reassembly.



The original rotor was removed from the hub assembly after the screws were disconnected.



The small bolts that secure the dust shield to the hub assembly were disconnected using a small socket wrench. Some of the small bolts can be accessed through the hole in the flange.



Using a screwdriver or chisel the outer edge of the dust cap was tapped to remove it from the assembly.



In order to remove the dust shield the hub flange has to be removed. Here the large nut that fastens it was removed with an impact gun.



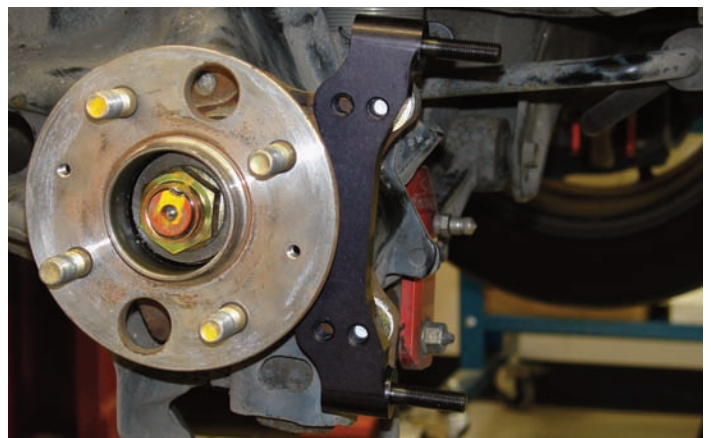
After the hub flange was removed, the dust shield could be removed from the assembly. It will no longer be used for the new brake application. After the dust shield was removed, the hub flange was reattached.



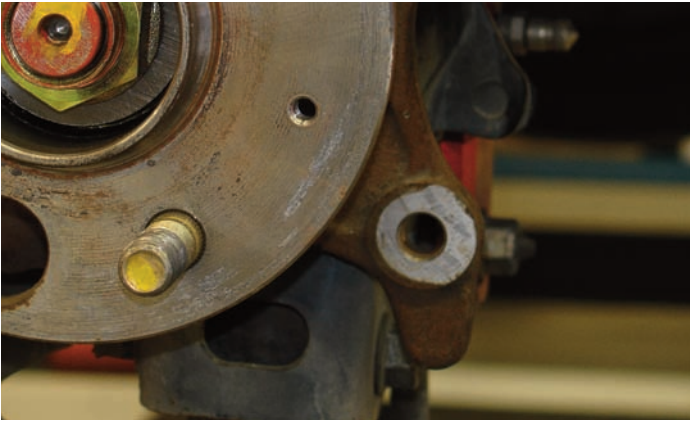
The caliper bracket mounting bolts were placed through the mounting ears and they were loaded with two washers, one 0.016-inch thick and the other 0.035-inch thick. A 0.057-inch thick washer was used under the bolt head.



The bolts were coated with Loctite 271 before they were installed in the mounting bracket.



The mounting bracket was installed and it was determined that a protrusion on the lower mounting ear was going to create a problem.



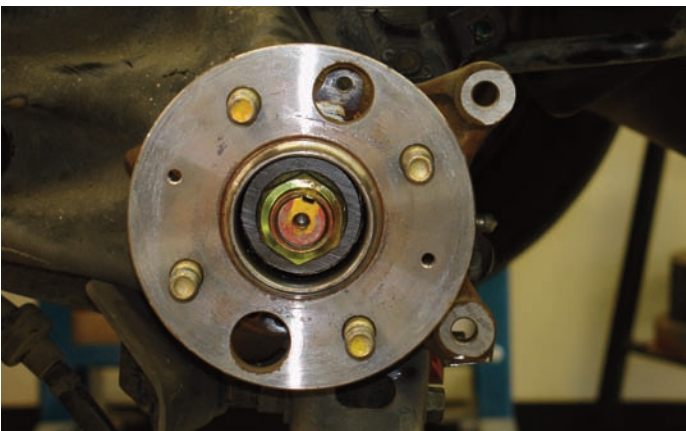
The bracket was removed to access the mounting bracket protrusion. Here you can see the extension on the lower mounting ear.



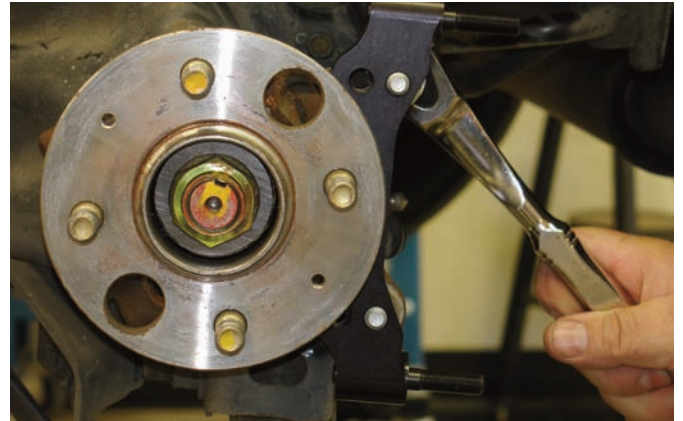
Using a three-inch cut-off wheel the small protrusion was removed as seen here.



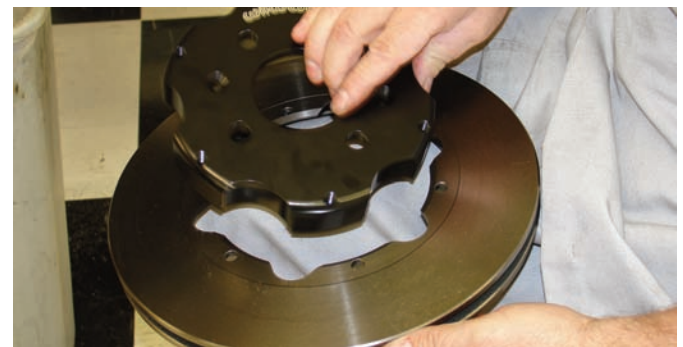
Here is the section that was removed. It is important to only cut off the lower section and not to cut too close to the ear hole because that will weaken the bracket. If you have a grinder you can flatten and radius the part.



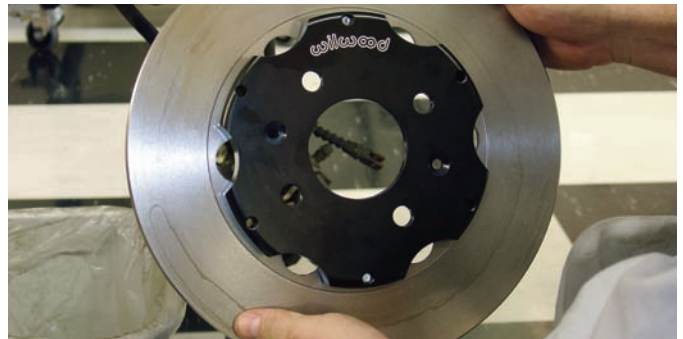
Now that the small protrusion was removed, the bracket could be reinstalled to the mounting ears.



Using the bolts and washers we used previously, the caliper bracket was installed and it was tightened to 22 ft-lbs using a foot-pound torque wrench.



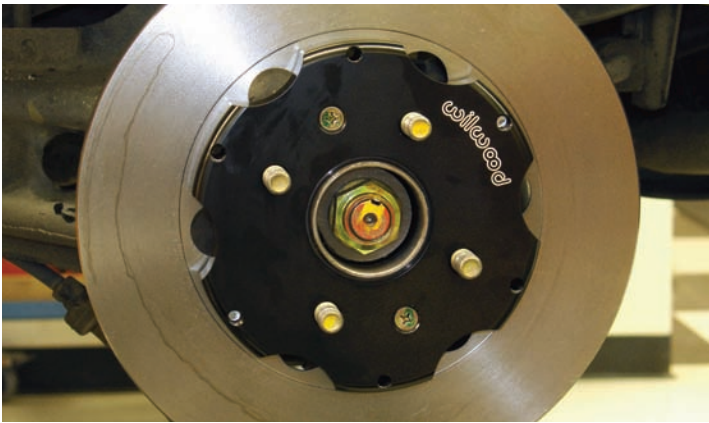
The aluminum rotor hub adapter was connected to the rotor with the bolts supplied in the kit. The bolts should be coated with Loctite 271 and then they should be tightened to 180 inch-pounds using an inch pound torque wrench.



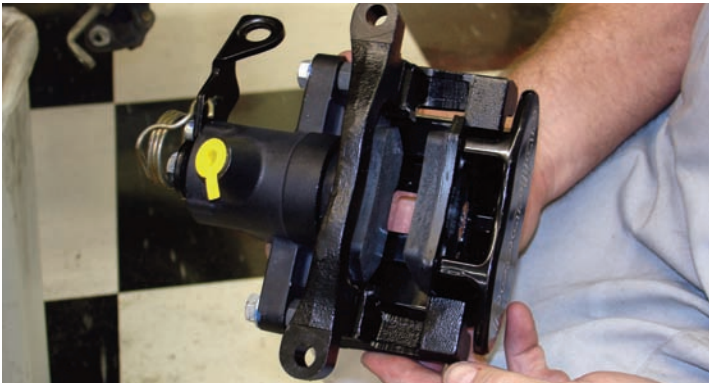
Here is the completed rotor assembly. Using the aluminum adapter the rotor weighs less than a full steel rotor.



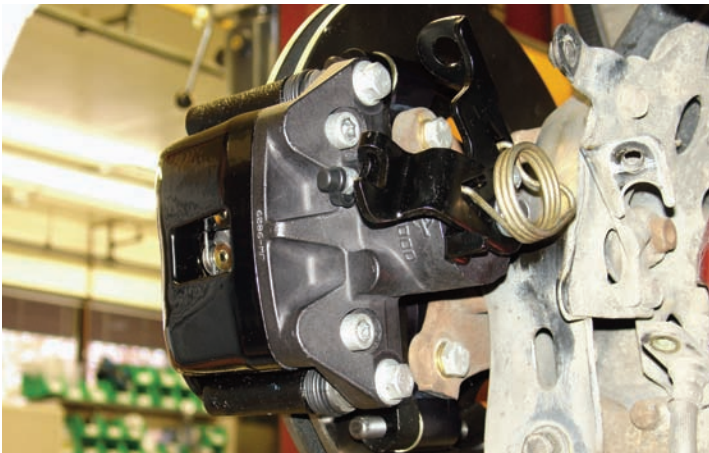
Here is the rotor after the adapter was installed. It was attached to the hub flange using the two original screws that were removed previously. The screws can be tightened using the impact screwdriver.



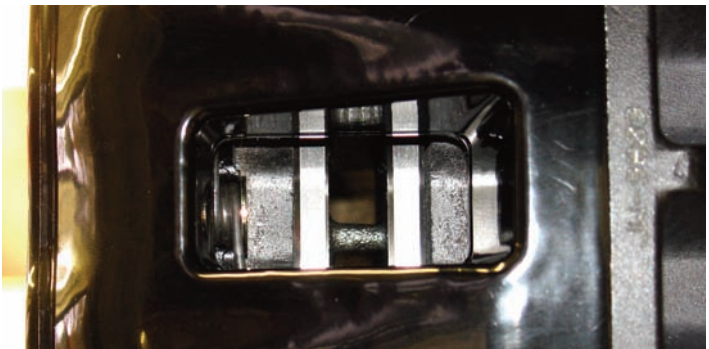
Here is the rotor after it was attached to the hub flange. At this point the rotor to caliper centering can be checked.



The brake pads were installed in the caliper assembly prior to connecting the caliper to the mounting bracket.



The caliper was connected to the mounting bracket studs so that the caliper to rotor centering can be checked.



Looking through the window at the top of the caliper, you can see that the rotor centering is perfect. At this point the mounting nuts can be tightened.



Using a socket wrench and the appropriate size socket the washers were installed followed by the self-locking nuts. They were tightened to 30 ft-lbs using a foot-pound torque wrench.



The original brake cable was removed from the car by disconnecting the brackets that secure it to the body pan.



Using the original clips the new Wilwood part number 130-10966 parking brake cables were installed. The new Wilwood part number 120-10840 braided steel lines were also connected to the caliper.



Here is the finished rear brake assembly that is hooked up and ready for brake bleeding and bedding. This rear brake assembly is larger and stronger than the original unit.

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