

CORVETTE BRAKES

During WWII many U.S. service men were stationed in England, and while they were there a lot of them got the chance to drive the MG, the Austin Healy, the Morgan and the Jaguar sports cars. The cars were small, light and nimble, and the Americans thought they were fun to drive. After the war the service men returned home with fond memories of the fun they had driving the English sports cars. It didn't take long before the cars were being imported into the United States and they were selling as fast as they could be shipped in.

The management at General Motors was on top of all of the car activity that was happening in the United States and they saw an interest in English sports cars. Until then there were no plans to make a sports car, but in 1951 chief designer, Harley Earl, the man who invented the concept car, decided to build an American sports car concept based on a Chevy to see if there was some interest. He turned the project over to Robert McLean and told him he wanted a small sports car that would sell for about the same price as a normal sedan. The only way McLean could do that was to use off-the-shelf Chevy parts, so he took a '52 Chevy chassis and modified it to a smaller 102-inch wheelbase dimension. In an effort to improve the car's handling, the engine and transmission were pushed back in the chassis so that a 53/47 front-to-rear weight distribution balance could be achieved. The only Chevy engine available was a straight six so it was outfitted with higher compression, a performance camshaft design and a tri-power intake manifold. The engine was developing 150 horsepower, which was much better than the four-cylinder engines used in some of the English cars and comparable to some of the six-cylinder engines used in others. Unfortunately the only transmission that could hold up to the stronger six-cylinder engine was the Powerglide automatic transmission.

The stylists were working on the body design with input from Harley Earl, so it started looking very smooth and stylish. Instead of looking like a British car, this sports car would be totally American in design. In fact, the car was so smooth for the time period that doing the body in steel would be cost prohibitive, so the Chevy engineers wanted to build

the body out of Fiberglass, which was a new process at the time. The concept car was being built for the 1953 New York Auto Show and was in development when the chief GM engineer, Ed Cole saw it and fell in love with the idea. Before the car even debuted, Ed Cole made sure it would be more than a concept. A meeting was called to name the new car and during the discussions, Myron Scott, an assistant advertising manager suggested "Corvette". Everyone loved the name because it sounded good and it was appropriate for the image of the car. A Corvette is a small, maneuverable warship that was smaller than a destroyer but equally lethal.



The concept car debuted at the New York Auto Show and it was a big success. The body design was awesome when compared to the cars at the show and a hot sports car was very desirable. All of the people at the show wanted to know when they could buy one. It took some time to set up a special assembly line to build the cars but after the engineering and logistics was finished, the car was finally released in June 1953. The car went on sale, but since the car was introduced toward the end of the model year, only 300 were produced. The '53 model was only offered in Polo White, but in 1954 the Corvettes were offered in Polo White, Pennant Blue, Sportsman Red and Black. Production ramped up in 1954 and 3,640 were produced but the Corvettes weren't selling as expected. The selling price was \$3,498 and that was \$1,000 more than the cost of a loaded Chevy sedan or hardtop. The Corvettes were great looking cars but the comfort, handling and acceleration was not up to expectations. Since the '54 Corvettes weren't selling well, only 700 '55 models were sold, and even though the cars were now available with V8 engines, most of cars being produced were offered with six cylinder engines.

In 1956 the Corvette received a new body style that was smooth and aggressive looking. Chevy also made advancements in their fiberglass technology and the car quality improved. The Corvette was also made more appealing by introducing an optional removable hard top so the car could be driven in all weather conditions. In '56 all of the Corvettes had 265ci 210 horsepower V8 engines and the sales started increasing. Small improvements were made to the chassis and the car's acceleration was far better than that of the six-cylinder, so the car sales increased. It would be interesting to note that the same front suspension and spindles used on the '52 and earlier Chevy was used for the Corvette and it didn't change until the new '63 Corvette was introduced. The Corvettes were now available with a floor-mounted three-speed manual shift transmission so they were more fun to drive. The '57 Corvette looked just like the '56 but there were substantial engineering changes. The '57 offered a T-10 four-speed transmission and the engine size increased to 283ci. Now Corvette buyers could select a 220 horsepower four-barrel engine, a 245 or 270 horsepower dual-quad engine or a 283 horsepower fuel-injected engine. The fuel-injected engine was actually delivering a little more than 283 horsepower but the marketing folks liked the one horsepower per cubic inch rating. This was the first really hot Corvette and the sales showed the buyers favorable response. Chevy sold 6,339 cars in '57 but only 1,040 were equipped with fuel injection.

The Corvette body changed in 1958 and since this was the automotive styling year of excess, that also carried over to the Corvette. In general the car body design was nice and it incorporated dual headlights but this car had some extras such as fake hood louvers that were dropped for the '59 model year. The '58 Corvette was also equipped with some powerful 283 engines and they included a 230 hp base engine, a 250 and 270 horsepower dual-quad engine and a 290 horsepower fuel injected engine. The Corvettes were becoming more popular every year and in 1958 9,168 were sold and it was the first year the car was profitable. The 1958 body design and mechanical offerings carried through 1960 with small trim changes.

Another body change was made in 1961 where the



front was similar to the earlier models, but the back was changed from the round design to one with a ducktail that was the forerunner of things to come. The new design carried over to 1962 with small trim changes, but the big improvement was the new 327ci engine. The Corvette was offered with several engine options in horsepower ranges starting with the base 250 horsepower engine. It was also offered with 300, 340 and 360 horsepower with carburetion and the fuel injection model delivered 375 horsepower. That horsepower was really more than the old '52 style chassis was made to handle and that was obvious when you drove a 375hp version and stabbed the throttle.



Since the Corvette was finally profitable, Chevy decided to introduce a completely new body and chassis design in 1963, which was also the 10th anniversary of the Corvette. Bill Mitchell, with help from Larry Shinoda, designed the new Sting Ray and it was a vast departure from the previous Corvettes. Zora Arkus Duntov, an engineer that was working on the Corvette from the beginning, worked on a completely new chassis that featured four-wheel independent suspension for improved handling. The suspension was also shortened to 98-inches. The engine options remained the same as the '62 model. The '63 Corvette also featured fake grilles on the hood and a split rear window and that made them look great, but rear vision wasn't good. The Chevy enthusiasts loved the new Corvette and sales really took off. Chevy produced 10,919 convertibles and 10,594 coupes.

The '64 Corvette was similar to the '63 but the hood vents were eliminated and the rear window was one piece. The big change came in 1965 when the chassis received four-wheel disc brakes and later in the year a 425 horsepower 396ci big-block engine became available. The '66 Corvette was similar to the '65, but the big-block engine size increased to 427ci. The '67 Corvette was the ultimate second generation body style with new side vents, a 435 horsepower tri-power 427 engine and another tamer 400 horsepower 427 became available. Chevy also offered an L88 427 engine option for the Corvette that was delivering 500 horsepower but Chevy claimed it was delivering 430 horsepower to appease the insurance companies. The race rated engine was only available in a stripped Corvette and only 20 were sold making them very desirable today. The 427 Corvettes were distinguished by the "Stinger" hood scoop and 427 emblems.



The '63 and '64 Corvettes had independent front suspension but they were still equipped with drum brakes. Wilwood Engineering saw the need for improvement so the company released a Front Disc brake kit part number 140-11011 for the car that features a front hub kit and Dynalite calipers. In 1965 Corvette introduced four-wheel disc brakes on the Corvette and they were a big improvement. The brakes were good when they were new but the calipers developed a problem of rust pitting in the piston bores and then they would start leaking. Wilwood Engineering became aware of this problem so a D8-4 caliper that is a direct bolt-on to the original brakes was released and it features a forged billet aluminum body and it uses stainless steel pistons so there is no chance of leaking. Since the Corvette used the same calipers from '65 to '82 this kit will work on both the second and third generation Corvettes. This brake improvement is perfect for Corvette owners who want to keep the car original in appearance. If originality is not a factor, Wilwood also makes two big brake kits

for Corvettes. The Superlite 6R Big Brake Front Brake Kit part number 140-10616 features six-piston Forged Superlite calipers and 13.06-inch rotors in the buyer's choice of slotted or drilled and slotted styles. The calipers are available in Platinum-E, Red or Black powder coat



Kit 140-10616

A similar kit is also available with 14-inch rotors and this kit is part number 140-10617. Wilwood also makes a Superlite 4R Big Brake Rear Kit part number 140-10472 that features four-piston Superlite calipers in Platinum-E, Red or Black powder coat. This kit features 12.88-inch rotors in a slotted or drilled and slotted style. A similar kit is also available with 14-inch rotor



kit 140-10472

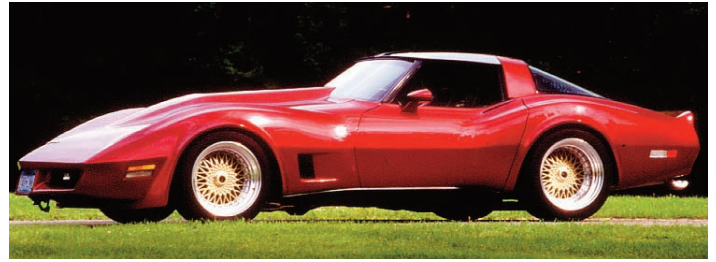
In 1965 Larry Shinoda designed the Mako Shark concept car Corvette and it was wild. The public loved the futuristic design and it became the idea for the new '68 Corvette, which was very similar to the concept car. The new car had removable tops and a pop-out rear window so you could turn the coupe into a car very similar to a convertible, but still retain the nice appearance of the coupe. This was the first T-top car and all of the Corvettes after this one had a removable top.

The engine selections including the L88 were carried over to the '68 model, but the L88 remained a limited edition engine option. The '68 Corvette had minor problems that were fixed when the '69 Corvette was released. Both of the cars were very similar in appearance and engine availability. In 1970 the body had new side grilles and the 427 was replaced with a 454 engine. The '70 model was also introduced with a strong running LT-1 350 engine that featured 370 horsepower and came with solid lifters for a high rev capability. The '70 Corvette was going to be offered with an LS-6 and LS-7 engine option but Chevy never released either one. The Corvette was only offered with a 390 horsepower LS-5 454 engine and the new emission mandates may have stopped Chevy from installing the monster LS-7 engine. The LS-6 engine was used in the Chevelle so this was the first time that a passenger car had a more powerful engine than a Corvette.



Throughout the '70s, the Corvette received small body changes and the power decreased on all of the engines. The horsepower calibrations also changed from gross ratings to net ratings so the horsepower ratings seemed really low. The '75 and newer Corvettes were offered with a base 350 engine and a higher horsepower L82 350 engine, neither of which were exciting in an effort to pass emissions regulations. In 1978 the Corvette received a new tail with a large rear glass that looked nice and it provided more luggage space. Two special models were also available, the Silver Anniversary model and the Indy Pace Car edition. Another body change came in 1981 that gave the Corvette a very aggressive appearance but the power was minimal. In fact in California the only engine available was a 305ci small-block. In 1982 Chevy introduced a new Cross Fire Injected 350ci small-block Chevy engine that met California emissions. The '82 featured a front air-dam style spoiler, a small rear spoiler and it was available with very nice looking alloy wheels. Another very desirable

feature was the rear glass was hinged and opened for easier luggage loading. This year there was another special edition model that became available.



The introduction of the '83 Corvette was late because it took longer for the company to complete the engineering and design changes. The new Corvette was a drastic departure from the previous model in design and engineering. The new car featured an aluminum front and rear suspension system, a unique chassis design and the front opened up in a clamshell design, which made engine access easy, but repair work expensive if the car got into an accident. The new Corvette ride and drive press release was held at the Riverside Raceway in mid-'83 and the new car was a big hit with the press. During a presentation to the press there was a discussion about the car and one of the journalists suggested that the car be called an '84 Corvette instead of an '83 and the Chevy management executives that were there liked that idea, so the new late introduction Corvette was now called the '84 Corvette. It would also be interesting to note that a convertible was not offered for the new model.

The '84 Corvette featured 16-inch wheels running gator back tires, it was outfitted with very positive rack and pinion steering and the dash display looked like a video game. The Cross-Fire Injected engine was outfitted with new high-flow aluminum heads and that increased the engine horsepower to 245. The car also featured a new overdrive automatic transmission or a five-speed manual transmission.



Corvette enthusiasts loved the new car and Chevy sold 53,877 cars. The '85 Corvette was similar to the '84 model except for the engine that featured a new Tuned Port Injection system that bumped the horsepower up to 250. The big change for 1986 was the introduction of a new Convertible model and it was used to pace the Indy 500. In 1989 the Corvette was outfitted with 17-inch wheels and new unidirectional tires.

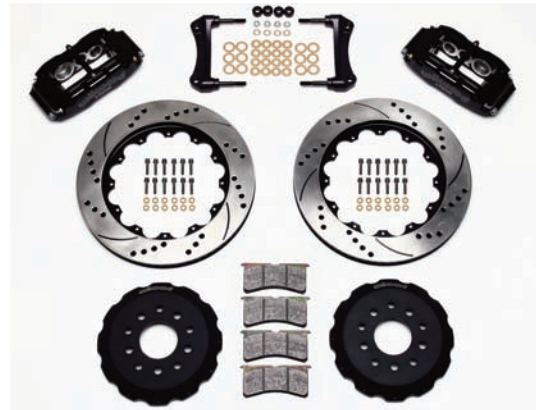
In 1990 the Corvette received a body revision and it was now available with an LT-5 engine option. The Lotus designed, dual overhead cam engine that was built by Mercury Marine was an all aluminum engine that featured 375 horsepower. The special ZR-1 option also included widened rear fenders that were housing P315/35ZR17 tires. The Corvette could go from 0-60 in 4.71 seconds and turn the quarter in 13.3 seconds at 110 mph. The engine was great, but the price for the Corvette was \$58,995, which was extremely high for the time period. It was about \$25,000 more than a regular Corvette. In 1991 some changes were made and the horsepower was increased to 405hp and accordingly the price also jumped to \$64,138. If the base price wasn't bad enough, the dealers added a premium price on top of that. The LT-5 engine was discontinued in 1995 a year before the new Corvette was introduced.

Wilwood Engineering introduced a brake improvement for the 1988 through 1996 Corvettes. The brake kit being offered is the Superlite 6R Big Brake Front Brake Kit part number 140-8337 that features six-piston Forged Superlite calipers and large 12.88-inch rotors in slotted or drilled and slotted style. The big calipers are available in Platinum-E or red and black powder coat.



Brake kit 140-8337

A similar kit is also offered with large 14-inch rotors and it is Wilwood part number 140-9298. Wilwood also offers a rear rotor update for the Corvette that includes the rotors, aluminum adapter plates, brake pads, braided steel hoses and the necessary hardware to make the change. The Wilwood part number is 140-8314.



Brake kit 140-9298



Brake kit 140-8314

The new 1997 Corvette was a big departure from the previous models and this car featured a front mounted engine and a rear mounted transmission to balance the front to rear weight distribution. The engine options were also changed and the car featured an all aluminum LS-1 engine that was developing 345 horsepower. This car also featured 18-inch rear wheels and 17-inch front wheels running unidirectional tires. The 1998 Corvette paced the Indy 500 and a special model was available. In 1999 the Corvette received a heads-up display that was projected on the windshield. A third coupe body style was also offered in addition to the hatchback and convertible, but it was a mystery why. Sales for the body style was very low but the mystery was solved when the Z06 option was released and was only offered in the lightweight coupe model. The Z06 featured a new LS-6 engine that delivered 385 horsepower for the '01 model and 405 for the '02 model year matching

the (LT-5) horsepower rating. In 2003 there was a special 50th anniversary edition made available that featured a deep red color.



In 2005 the Chevy engineers wanted to design the ultimate Corvette that used all of the best features of the previous Corvettes and none of the problems. It was also a goal to bring the price down on the car so sales could be increased. The engineers started by making the car lighter, changing the body design to look more aggressive and installing a new engine to make the car faster than any of the previous Corvettes in base form. The Corvette received a new LS-2 engine that develops 400 horsepower and 400 ft-lbs of torque. It is interesting to note that this is net horsepower not gross so today's Corvette is developing more horsepower than any of the 427s in the early years. The Corvette also received exposed headlights, the first since 1962 and that was for a design feature and it eliminated the heavy and expensive mechanisms necessary for hideaway headlights. The new base model Corvette does 0-60 in 4.2 seconds and it turns the quarter in 12.6 seconds at 114 mph. The Z06 Corvette is still available and the special engine is rated at 505 horsepower. This special edition Z06 can go from 0-60 in 3.7 seconds and it turns the quarter mile in 11.7 seconds at 125 mph. The top-of-the-line Corvette the ZR1 features a supercharger and the engine produces 638 horsepower. The ZR1 does 0-60 in 3.4 seconds and it turns the quarter mile in 11.3 seconds at 131 mph. Over the years the Corvette has earned a reputation for being one of the ultimate American sports cars and it all started in 1951 when a design legend wanted to have a car that would compete with the English sports cars.

Wilwood has been offering brake improvement kits for Corvettes over the years and we are offering several race proven disc brake kits for the 2005 and newer Corvettes. One of the really impressive brake kits we offer is the Superlite 6R Big Brake Front Brake Kit part number 140-8921 that features six-piston Forged Superlite calipers in Platinum-E or black and red powder coating, and 13.06-inch rotors in a choice of slotted or drilled and slotted styles



Brake Kit 140-8921

A similar kit is available with larger 14-inch rotors and it is part number 140-8922. Wilwood also offers a W6A Big Brake Front Brake Kit part number 140-10163 that features six-piston W6A calipers in Platinum-E or red and black powder coating, and 14.25-inch diameter rotors in slotted or drilled and slotted styles.



Brake Kit 140-10163

Wilwood also offers a track brake system for the Corvette the WA6 Big Brake Front Brake Kit (Race) Part number 140-10226 that features

W6AR six-piston radial mount calipers with Thermlock pistons, 14.25-inch SV-GT staggered directional vane rotors, forged aluminum hats and high friction race compound pads.



Brake Kit 140-10226

Wilwood also offers several rear disc brake kits for the 2005 and newer Corvette starting with the Superlite 4R Big Brake Rear Kit for OE parking brake system that is Wilwood part number 140-8032. The kit features Forged Superlite calipers in Platinum E or red or black powder coating, 12.88-inch rotors in slotted or drilled and slotted styles, caliper brackets and forged rotor adapter that works with the original parking brake mechanism.



Brake Kit 140-8032

Wilwood also offers the Superlite 4R Big Brake Rear Brake Kit for OE parking brake part number 140-9119. This kit offers the Billet Superlite 4R calipers in Platinum-E or red and black powder coating, and 14-inch rotors in slotted or drilled and slotted styles. Wilwood also offers the Superlite 4R Big Brake Rear Brake Kit (Race) part number 140-10638 that features BSL4R four-piston calipers

calipers with stainless steel pistons, high temperature seals, GT series directional Vane 12.88-inch competition rotors, forged aluminum hats and high friction race, compound pads. The competition kit is for use with the front race kit. If you use your Corvette for street driving or for action on the track, Wilwood offers a kit that will make it more fun to drive.



Brake Kit 140-9119



Brake Kit 140-10638



Wilwood Engineering

4700 Calle Bolero
Camarillo, CA 93012
(805) 388-1188

Copyright © 2010 Wilwood Engineering, Inc. -
All Rights Reserved