

# REINCARNATION

## A Stack of Fresh Braking, Steering, and Suspension Parts Breathe New Life Into This 1967 Chevelle

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**O**ld cars suck to drive. Now that I have your attention let me explain. It's not like they were awful to drive back when they were new in the late 1960s, but compared to what we have today the performance pales in comparison. After all, the braking, steering, and suspension tech of four decades ago didn't lend itself to razor-sharp

performance, or even spork-sharp performance. Add in the wear-and-tear factor and it's amazing they handle and stop as well as they do.

Luckily—thanks to the aftermarket—it's easy to stuff modern performance into our classic Chevys (certainly easier than trying to give any modern car classically cool good looks). Of course, many of

these options, aside from being very expensive, involve welders and cutoff wheels. But, there are bolt-on solutions for those with more wallet friendly budgets.

Stuffed into the handling category are the steering components. After all, even a car with a great handling package will be miserable to drive if it has vague, unresponsive steering.





Before starting on the install we took our subject '67 Chevelle and did some "before" brake testing and got a feel for how it handled around town. The steering was vague and over-assisted, which was not a good combination. But it was the brakes that felt really bad. From 60 mph it took over 177 feet to come to a stop, and that was on the first try. After a couple of hard stops the brakes went on vacation and we were well into the 200-foot zone. Even worse is that rear would easily lock up, which made the car unstable. In fact, on the third try the 3,700-pound Chevy almost spun around.



Our Chevelle ran 15-inch Rally wheels around its stock brakes. Unfortunately, those wheels were a no-go with the new, bigger binders. Our solution was to pick up a set of affordable 18-inch polished Streeters by American Legend and wrap them in some fresh radial tires, which made the stock disc brakes look even more puny. In the interest of fairness we retested the car with the better tires and there was an improvement in stopping distance (a best of 158 feet), but the Chevelle was still very unstable and after a couple of hard hits the pedal nearly went to the floor.



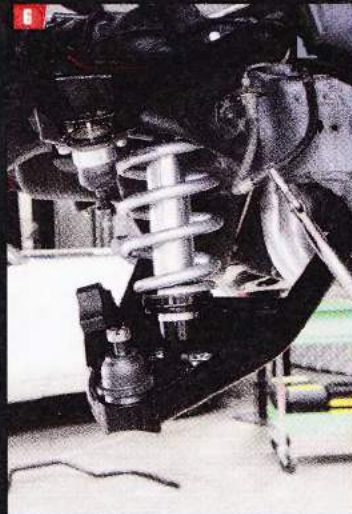
It was then time for the part we hate, namely, removing the coil springs. We couldn't get our spring compressor in place so we used a jack stand and the lift to slowly raise the car and relieve the tension on the coil springs. There's many ways to skin this feline, but just make sure to be careful since there's a ton of stored energy in the compressed spring. Once the spring was gone we went ahead and removed the stock control arms, sway bar, and worn steering bits.



First to go on, with the supplied Grade 8 hardware, were the new tubular lower control arms. The TIG-welded arms came pre-assembled with new bushings and Moog ball joints. CPP designed the arms so that the same part will work for traditional-style coil springs as well as their coilover shocks. This is a nice feature for those that want to start with springs and upgrade later down the road. Our Stage IV Pro Touring kit came with coilover shocks. This meant we needed to open up the mounting holes just a touch to accommodate the larger fasteners.



Yeah, they look good, but more importantly, these new TIG-welded tubular upper control arms are considerably stronger than what GM put in the '67 over 40 years ago. The arms are made from 1.25-inch 0.120 wall DOM tubing and have thick, 1.5-inch 0.188 wall pivot barrels. This ensures the pivots stay true even under stress. They come preassembled on new billet chromolly 4130 cross-shafts and pivot sleeves. These sleeves capture both sides of the bushing, unlike the stockers that are only retained on one side. As a result, they're much stronger and better resist flex. As a safety measure, they incorporate an interlocking shaft and sleeve design so that the bolts can't work loose. The fact that they came with new ball joints already installed saved us time.



The new arms attached to the Chevelle frame in the same way that the old ones did. Once the upper and lower arms were in place we slid the coilover and spring assembly into place and secured it. The single-adjustable coilover billet shock is sourced from QA1, but are custom valved to CPP's specifications. We also picked up the thrust bearing kit since it makes adjusting the ride height much easier. You can buy the thrust bearings separately (PN 4052-K) or, like we did, in a kit that included a spanner wrench (PN 7888-110, \$49).



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The headers on our big-block were pretty close to the factory steering shaft so we decided to gain a bit of room by using CPP's Max Clearance nickel-plated power steering shaft (PN CPMAX-KN, \$139), which included a coupler and a new rag joint.



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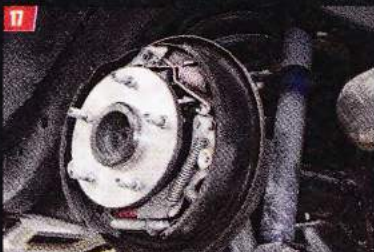
Here's the completely assembled left front suspension system. You can also see the new 1.25-inch hollow sway bar and CPP's new 2.5-inch aluminum sway bar mounts (PN FBM25-M285, \$69 each) which look great and are stronger than the stamped-steel versions.

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Since the Hydra Stop uses power steering fluid pressure, we had to rework our power steering hoses. We also added a small Magna Pure filter (PN 20-0038F, \$20) after the Hydra Stop unit to make sure no contaminants would clog the unit. The plumbing was made easier with CPP's stainless hydraulic brake assist hose kit (PN HAHK-S, \$199).

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Our '67 Chevelle may have had factory front disc brakes, but the rears were the typical drum deal. They looked to have been recently serviced, but that didn't seem to help their performance as evidenced by our testing.

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At some time in its past someone had upgraded the brakes on the Chevelle to CPP's master cylinder, and while it worked, we had a better idea. First up was removing the master and brake booster unit.

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And after a long day we were done with the front of our Chevelle. The larger brakes look great and easily fit inside the new wheels.

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Before we could remove the backing plates we had to pull the axles, and before we could do that we needed to release the C-clips in the differential. To do this we pulled the cover off of the 12-bolt, carefully rotated the diff till it was in this position, and removed the small bolt (seen with the blue thread locker on it). With that done we removed the pin (a magnet helps if it won't drop free) and wiggled out the C-clips. With the pin out, we made sure not to spin the diff in any way whatsoever (or parts would start falling out of place and there's much sadness).

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Hydraulic assist braking systems have long been used in OEM applications where engine vacuum isn't a viable option of brake assist. CPP's new Hydra Stop uses fluid pressure from the power steering system to offer braking assistance. After driving CPP's Hydra Stop-equipped test car we were duly impressed and decided to give it a go. This is a great option for those with lumpy, vacuum lacking, engines. They come in two flavors, a chromed-out version dubbed "Show Stopper" and the Street Beast version. Ours normally runs \$829 for the assembly, but since we only needed the booster (the MCPV-1 master came with our kit) the up-charge was just \$469.

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And here's what we were left with. The existing brake hardline will eventually be replaced with new, pre-bent brake lines supplied in the CPP kit. They also supplied both a 10-bolt and a 12-bolt differential cover gasket. CPP included a stack of caliper bracket shims and new T-bolts in the kit. How many shims you'll need depends on your flange and the only way to find out is to try some, test fit the caliper, and see if it ends up centered over the rotor. They also include new rear wheel studs for the axles. Here's the caliper bracket bolted to the housing flange. Note that the bolt at 4 o'clock wasn't used.

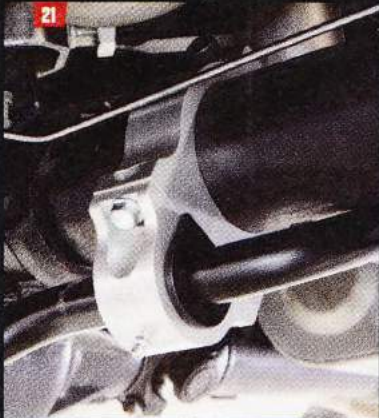


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We were then able to install the new 12-inch slotted, drilled, zinc-washed rotor and bolt on the CPP caliper. The single-piston floating calipers (with integrated parking brake) had to mount forward to provide clearance for the shocks.

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In addition to the rear sway bar option (PN OPTION-RSB2, \$50) we also got fancy with CPP's deluxe rear billet poly/aluminum mounts (PN RBM-DKM25, \$129). The billet bushing mount looks a lot better than U-bolts and were much easier than welding on sway bar support pads. Did we mention they look better?

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Part of improving the handling of any car is stiffening up the suspension in terms of flex. Our Chevelle actually had nicer parts than most we've seen since it was fitted with a rear sway bar and factory "boxed" lower trailing arms. But even the upgraded boxed GM trailing arms bend and flex a lot compared to these tubular pieces from CPP. The bars came with the urethane bushings already installed. The new arms simply bolted in place of the old ones using Grade 8 hardware supplied by CPP.



For handling we opted for Classic Performance Products' (CPP) 1964-67 Chevelle Stage IV Pro Touring kit (PN 6467PTK-4). This system included front and rear tubular control arms, billet single-adjustable coilover shocks, brakes, spindles, front and rear performance sway bars, and a host of other parts needed for the installation. The 1967 Chevelle we chose for this install was rolling on stock front

disc and rear drum brakes, and its ability to stop was sketchy at best. Fortunately, the Stage IV kit came with CPP's big-brake system that included rotors, calipers, C5 bearing hubs, C5 spindles, parking brake cables, brake lines, brackets, and everything else needed for a high-performance four-wheel-disc brake system. To this we added a 500 Series steering box (PN CP50004) along with some fresh components

to replace the worn-out stuff.

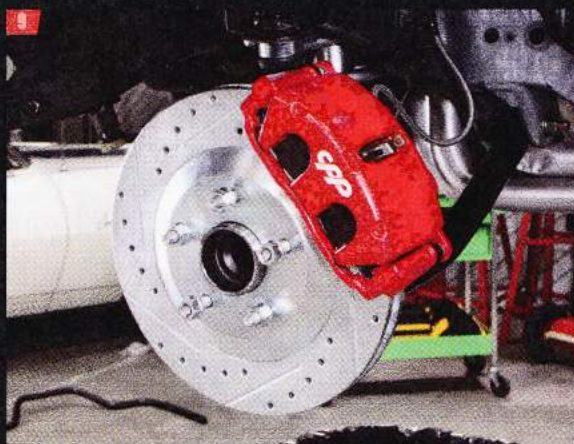
Now, a big pile of new, shiny powdercoated parts is cool and all, but we wanted to see what the gain would be from such an expenditure, so we decided to do a before and after test on the new brakes. And while these kits are pure bolt-on deals, there are a lot of parts, so the installation took a full two days, but the results were more than worth it.



Our kit came with A/F/X-Body tall C5 spindles. According to CPP, they have a raised upper ball joint mount for better camber change and they work with all of their tubular control arms (and even stock control arms if you want). As a bonus, they work with any brakes designed to fit a C5 spindle (including easy-to-find, and dirt cheap, GM C5/C6 takeoff brakes) and they even accept 1997-'04 C5 Corvette hub bearing packs! Yep, no more packing wheel bearings with grease! They are cast iron and can be bought separately for just over \$260 a pair. Note: the kit didn't come with steering arms since the stock ones can be reused. If you need them, CPP sells a pair for around \$70 (PN 6472SP-A).



The kit also came with these C5-style bearing packs (PN 513139, \$80 each). This is a modern sealed bearing that simply bolts to CPP's new C5-style spindles. They don't change the track width at all and even have the ABS wheel speed sensors if you want to try going that route. For cars that are going to be pushed hard (or extremely heavy cars) CPP recommends upgrading to their high-performance SKF hub bearings (PN BR930544).



With the new control arms installed the rest was crazy easy to do. The main reason for this was that the front spindle, hub, steering arm, and brake parts came completely preassembled from CPP. Even the brake pads were installed, so all we had to do was toss the whole deal between the control arms and secure it in place with castle nuts and cotter pins.



The '67 suffered from the same vague steering found in all '60's era GM cars. The first step in fixing this was to remove the stock steering box. The replacement box was a CPP 14:1 close-ratio 500 box (PN CP50004, \$379). Having good steering response is critical if you want to improve the handling and feel of an older Chevy and it's one of the easiest upgrades you can do. To maximize the gains from our new close-ratio steering box we also had CPP send over a new steering linkage kit (PN 6467SLK-CP, \$199) along with a pair of their much stronger tie-rod sleeves (PN ES2032SP-A, \$69).





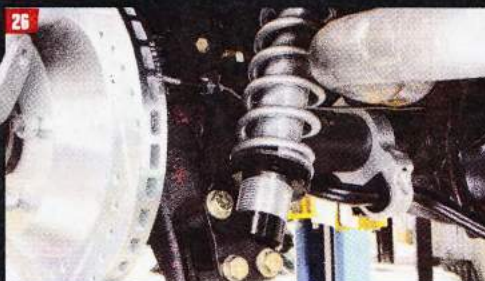
It's pretty easy to see how much stronger the new upper arm is compared to the stamped steel stocker. The other huge benefit is that it's adjustable, so we can fine-tune the pinion angle and better align the rear end.



The hardest part of the entire rear suspension is typically swapping out the upper control arm bushings in the rearend housing. CPP does sell a nice 4-in-1 ball joint kit (PN BJT, \$79). In addition to easily removing and installing ball joints, it's also quite adept at removing and installing rear control arm bushings. Buy one and all of your friends will want to borrow it.



One upgrade we opted for was CPP's coilover conversion kit (PN PTK-RCOILOVER-SA, \$229). Here you can see the main shock bracket assembly. The larger spacers went between the two plates while the short ones went between the rear plate and the existing shock mount. The system utilized the existing shock mounting hole, but we had to drill a hole for the upper bolt. If you look closely you'll notice that the plates have a slight bend in them. This adds a ton of strength to the finished assembly.




The rear coilovers were single-adjustable billet QA1 pieces and a CPP coil spring. Besides being great looking (especially compared to the homely stock shock) this will let us dial in the ride and handling of the Chevelle in addition to its ride height. We lucked out and just managed to clear the existing exhaust, but keep in mind that this does take up a bit more space than a simple shock.



And with that we were done with the install and could get the Chevelle down to our local alignment shop. The new parts look great, but more importantly they should help this 3,700-pound Chevy negotiate the curves a whole lot better.



When the Chevelle showed up to the shop it rolled on 15-inch Rally wheels. Well, they wouldn't clear the new brakes so we added a set of 18-inch rollers from American Legend. Even with better tires the braking performance was awful with a best stopping distance of 158 feet. Keep in mind that was with the rear locking up and trying to come around. With the new suspension and brakes we tested the car and were rewarded with a best stopping distance (from 60 mph) of 125 feet. Best of all it was 125 drama-free feet. Even after six all out hits, our stopping distance was still an impressive 129 feet. Six hard stops on the old brakes would have imbedded us in a tree. The other big bonus is just how good our Chevelle looks with its new stance and wheels. 

#### SOURCES

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