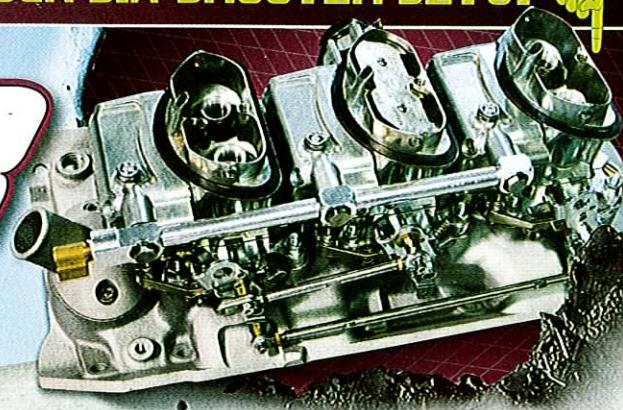


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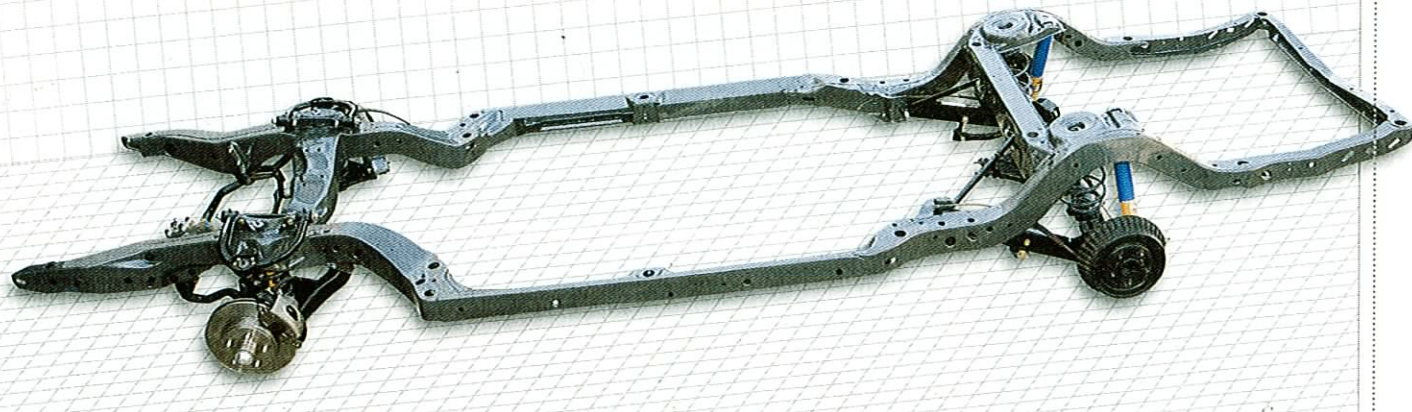
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MONTE MAKEOVER

FOLLOW A FRAME-UP REBUILD OF A '71 MONTE CARLO. **By Mike Harrington**

When was the last time Super Chevy magazine ran some first-generation Monte Carlo tech stories? Come to think of it, when was the last time SUPER CHEVY ran any type of Monte Carlo tech stories? There was an exhaust system install in the January 2007 issue, but it's been awhile since there was a more substantial piece.

Harrison Ortis, proprietor of Harrison's Restorations, purchased an \$800 running '71 Monte Carlo at a recent vehicle auction. This bone stock Monte must have been a Grandma's grocery getter, because, minus the body dings and ragged vinyl top, it's in decent enough shape. We sat around the shop bench racing one night about what to do with this groundbreaking personal luxury car, and as one idea evolved into another we think we came up with a solution. Most of the Monte Carlos we see around the country are stock-looking resto rods or low riders. Not that there is anything wrong with either, but we wanted to do something a bit different.

We have also seen a few drag racing Monte Carlos and that was where this project was headed until we decided to turn it into an action touring


car. How about something that can be run in one of the over-the-public road races that take place in Nevada, such as the Silver State or Nevada Open Road Challenge, and then take it to a local cruise night on a regular basis?

We are still tossing around other ideas and trying to talk Harrison into forgetting about a big-block and to go with a modern LS engine, but that's a story for another day. We still have more plans to iron out, but the one thing we agreed to is that the OE suspension has to go. In order to do it right, the body and frame had to be separated and the frame completely rebuilt.

Part of "doing it right" was to turn to Hotchkis Sport Suspension for help in improving the handling of the Monte. Hotchkis is not just a manufacturer of suspension components.

The Hotchkis guys are also racers who have proven themselves on the track. Who better to design and build suspension components than experienced racers? It was suggested to us that we use their Total Vehicle System (TVS) for the Monte Carlo. The great thing about GM vehicles is that so many of them are almost identical on the underside. The Hotchkis TVS application part #80008 fits GM '69-72 A-body applications. The TVS kit comes complete with:

- » 1-inch sport lowering springs front and rear.
- » Double adjustable upper trailing arms (for easy pinion angle adjustment) with can bushings.
- » One-piece lower trailing arms with polyurethane bushings and trailing arm mount braces.
- » Performance sway bars (1 3/8-inch hollow front and 1-inch rear), complete with polyurethane bushings, axle mounts, bolt kits, grease pack, etc.
- » Upper and lower tubular A-arms with ball joints, polyurethane bushings and bolt kit.

All pieces in the TVS kit come with hardware and are powdercoated for looks and durability. Besides the TVS kit, we ordered a few extra components from Hotchkis for the Monte Carlo—Bilstein shocks tuned by Hotchkis and a set of late-model B-body spindles with OE-style brakes and a front-end rebuild kit. Along with the suspension, we ordered a high-performance Remy Racing steering box to complete the suspension build. 



1



After about three hours of work, Harrison had the body and frame separated. After another few hours, the frame was completely stripped down to the bare bones and then taken to the sandblaster.

2



When the frame came back from the sandblaster, the job of re-welding and boxing in the rails was at hand. The rear crossmember was completely re-welded, both top and bottom. From the factory the rear crossmember is only tacked, then riveted in place. The trailing arm perches are also welded for extra strength. Harrison boxed the frame with 1/8-inch steel plate, but left the front section undone on account of not knowing where the new transmission crossmember would be situated. The frame horns, up front, were also welded both top and bottom. Once all the welding and re-enforcement was done, the frame was off to Corsair Powder Coating in Ontario, California.

3



The frame has been powder-coated a beautiful pearl grey with a powdercoated clearcoat. All the Hotchkis parts are here, and we are ready to begin. It was amazing how quickly the install went from

this point forward. Not having to lie on your back under a car, assembling a bare frame was so much easier.

4



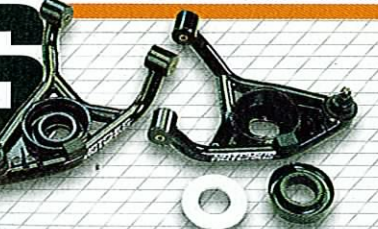
We started on the front end first and worked our way back. First was the bump stop and then the upper A-arms bolts, then the tubular upper A-arms.

5

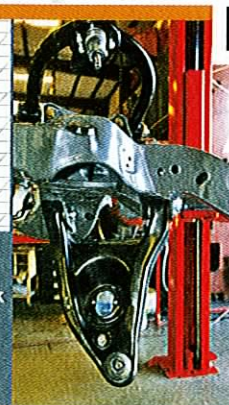


When the upper A-arms are installed, two 1/8-inch wheel shims were used as a generic starting point for wheel alignment. Once the vehicle is together the real alignment will come later.

6



Now came time for the lower A-arms. Currently the lower A-arms were on back-order, so we had to use the stock arms to finish the build. As soon as Hotchkis has more in stock, the old arms will be removed and replaced with the new ones.



7



Next came the 1-inch performance lowering springs. This part was the most difficult part of the install, and even then it was not much of a problem.

**8**

If you have a spring compressor, then use it. We used two of Harrison's employees to add weight to the top while the spring was compressed with a floor jack. No problem. Since we are still waiting on the lower arms we didn't index the front springs; we will do that when the lower arms arrive. Spring indexing is very important to the ride quality and height.

9

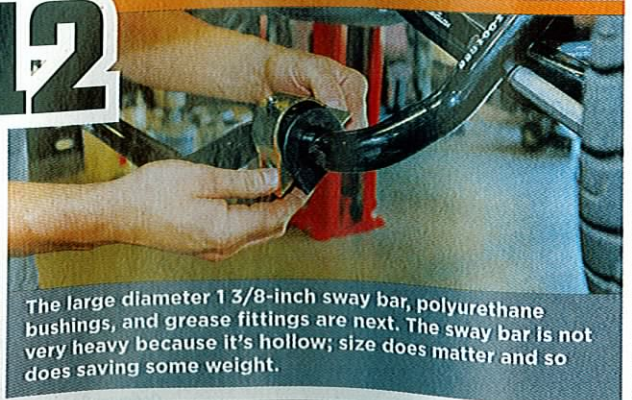
Another item we ordered from Hotchkis that was not included in the TVS kit were these B-body spindles and 12-inch brakes. Original, stock 1964-1972 Chevelle, Malibu, El Camino and other GM A-body cars are equipped with 7 1/8-inch tall front spindles which, at stock ride height, orient the upper ball joint below the inner A-arm pick up points. This creates positive camber gain during bump (upward) travel. This geometry is detrimental to good, consistent cornering grip because the car will ride on the outside edge of the tire. This causes, in NASCAR terms, a big push. Using the complete tire contact patch is essential for good handling. Wearing off the white letters during cornering is not the right way to go. The Hotchkis B-body-type spindle is 8 3/4 inches tall and orients the upper ball joint above the cross-shaft pick up points at ride height. This pulls the upper ball joint in toward the engine during bump travel, creating the essential negative camber curve. The tire remains flat on the road while cornering, giving maximum traction and control. Due to the larger spindle with a variety of caliper mounting options, the Hotchkis' B-body spindle kits allow A-body owners to employ a set of 12-, 13- or even 14-inch brake rotors and big, single- or multi-piston callipers. We don't plan to use the OE-style rotors and callipers on the track; those will be replaced with bigger and better brakes when the Monte gets to that stage.

10

Part of the suspension includes the steering box. We went with Remy Racing's 600 series box with a 16:1 ratio. The 600 series box (part # 60016) is a bolt-in replacement for all GM A-, B-, F-, and X-body vehicles from 1965 through the early 1990s. This new box has a rack-and-pinion style servo, which translates into solid and responsive steering without any of the slop from the old box.

11

We are complete up in the front. All the suspension is done, as well as the steering linkage. Time for the large diameter sway bar.

12

The large diameter 1 3/8-inch sway bar, polyurethane bushings, and grease fittings are next. The sway bar is not very heavy because it's hollow; size does matter and so does saving some weight.

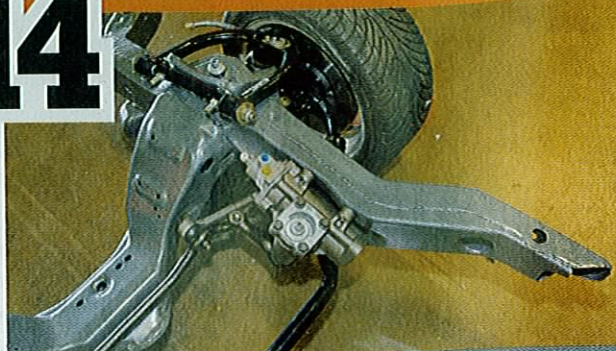


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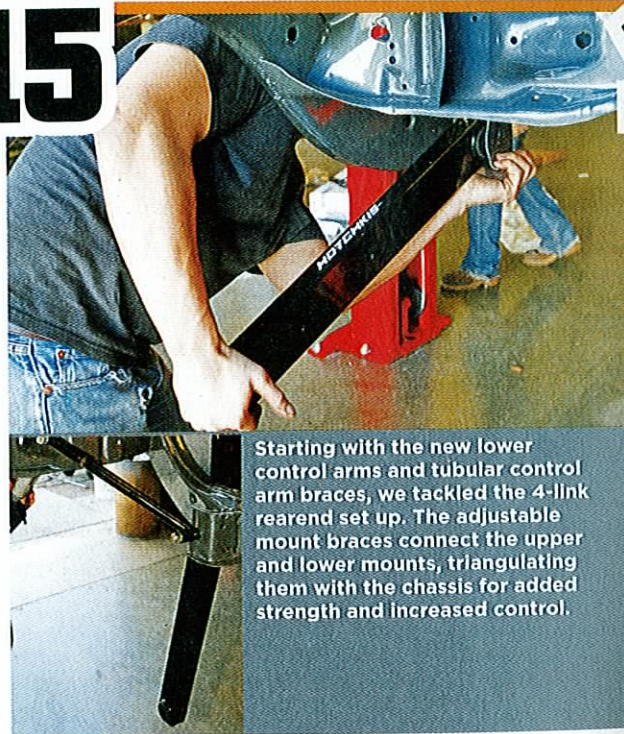
Included in the TVS kit are Bilstein shocks. Bilstein builds the shocks, and ships them to Hotchkis where they are further tuned. You can find Bilstein shocks on high-end performance cars, circle track racers, and even dirt track racers. And now we have them on the Monte Carlo.

14



Take a look at the completed front end with the wheel. It's not bad looking. It's almost a shame to cover this frame.

15



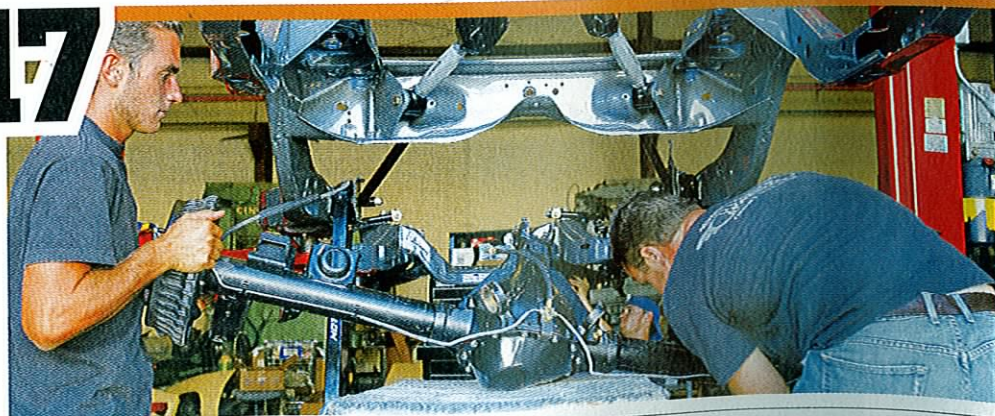
Starting with the new lower control arms and tubular control arm braces, we tackled the 4-link rear end set up. The adjustable mount braces connect the upper and lower mounts, triangulating them with the chassis for added strength and increased control.

16



The double adjustable upper arms feature left and right hand threads and Swivel-Max bushings to maximize pinion angle adjustment and eliminate traction-robbing wheel hop for quicker, smoother launches. Increased roll stiffness improves cornering, and driveline vibration caused by improper pinion angle is eliminated. The upper arms are fabricated from CNC-cut steel and billet aluminum. Both arms are fitted with tough fluted polyurethane bushings and greasable zerk fittings.

17



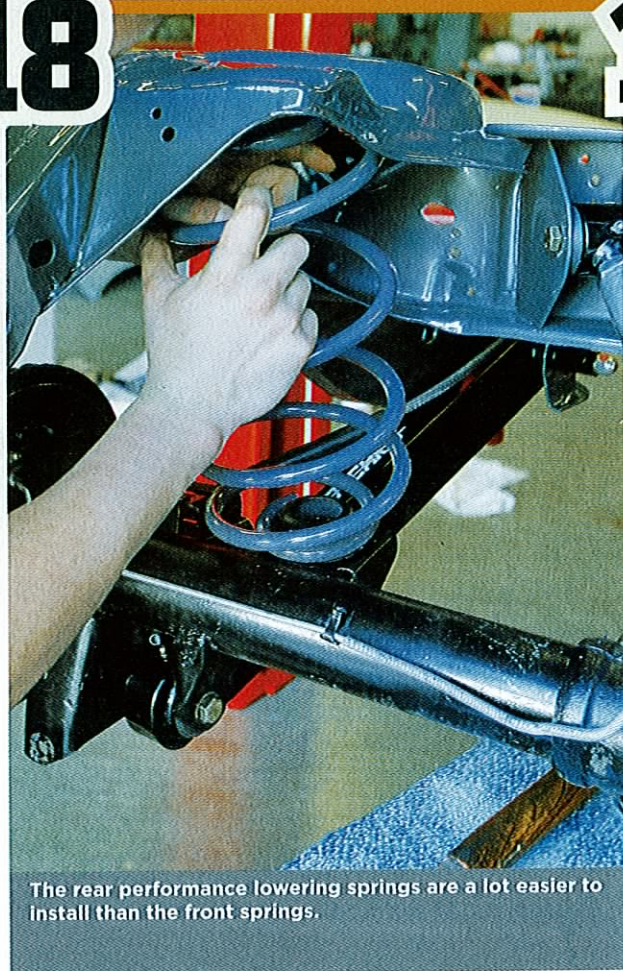
Now comes the fun part: trying to lift the heavy 12-bolt rear end into place. You may notice that the rear end still has the old drum brakes. Those will be removed when we upgrade the entire braking system. In fact we have plans to upgrade the whole rear end. Don't worry, we're going to keep it all GM and build a better bulletproof 12-bolt.



TECH

MONTE MAKEOVER

18

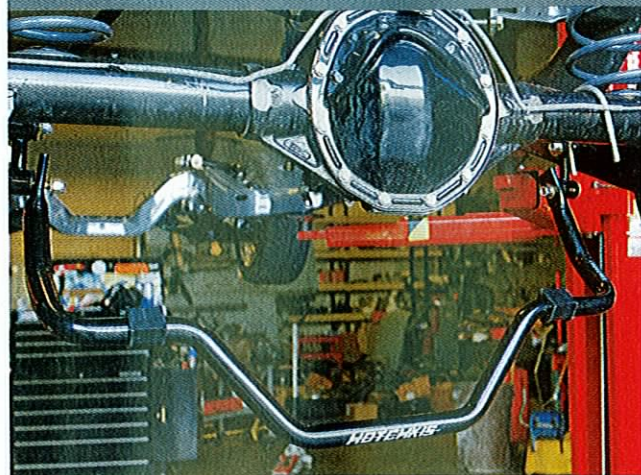


The rear performance lowering springs are a lot easier to install than the front springs.

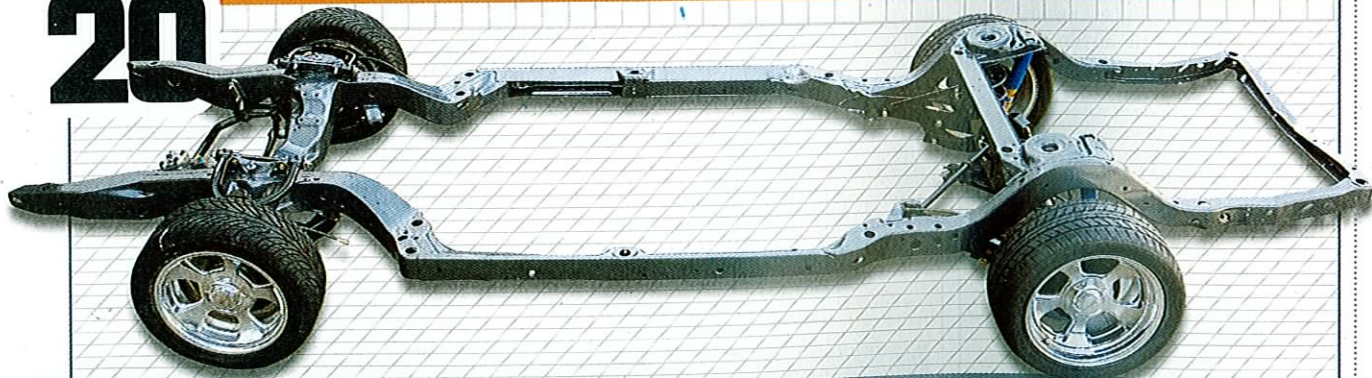
19



The tubular rear sway bar offers two adjustment options, 75 and 100 percent stiffer than stock, so you can fine tune rear roll stiffness for optimum traction. All the hardware, bushings, etc. are in the TVS kit for the rear sway bar.



20



The re-welded rebuilt frame is rolling around the shop. Minus the brake upgrades and rearend build up, the Monte Carlo's platform is ready to roll.

SOURCES

CORSAIR POWDER COATING
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