

# RAISING A BELOVED STANDARD

Installing a TCI Independent Front Suspension on a '47-'54 Chevy Truck

Story and Photography by Jeff Tann



Here is the suspension, finished and ready to go. This new suspension will dramatically lower the front end and will vastly improve the ride and handling of the old truck. The next step is lowering the rear of the truck with a TCI coilover suspension.

**E**ARLY CHEVY PASSENGER CARS UNDERWENT MANY ENGINEERING IMPROVEMENTS STARTING IN THE MID-'30s. ONE OF THE MAJOR IMPROVEMENTS WAS IN RIDE AND HANDLING, WHEN CHEVY STARTED USING A PRIMITIVE FORM OF INDEPENDENT FRONT SUSPENSION. CHEVY CONTINUED THE SUSPENSION IMPROVEMENTS BY FINE-TUNING FUNCTIONAL CHARACTERISTICS OF THE DESIGN. WHILE ALL THIS ENGINEERING WAS TAKING PLACE ON THE AUTOMOBILE, THE TRUCK CHASSIS REMAINED VIRTUALLY UNCHANGED AND PRIMITIVE BY COMPARISON.

Trucks continued to use an I-beam axle with a dual-parallel leaf-spring suspension. In fact, Chevy continued using that suspension style into the late '50s. The suspension was tough and easy to work on, but handling was, by modern standards, marginal. Plus, the trucks rode rough. GMC shared the same trucks and engineering, but were built a little more heavy duty, so in certain cases they rode even rougher. If you wondered where the expression "it rides like a truck" came from, go for a ride in an early Chevy or GMC pickup.

In 1947, Chevy introduced a new truck with a very beautiful design. It had big flowing fenders and a large comfortable cab. The new truck became a big hit with truck buyers and GM sold

them in large numbers. The basic truck design was used unchanged from 1947 until mid-1955, when a vastly improved new truck was introduced. Over the years, the chassis and bodies remained the same with a few small differences, even in grille design.

Popular when they were new, the early pickups continue to be a restoration favorite. The trucks have a timeless design, were built sturdy and with a few hot rod techniques, they can look awesome.

Lee Everett always liked the design of the early pickups and purchased one several years ago. When the original six-cylinder engine finally gave out, he replaced it with a 327 and kept on driving the truck. He always wanted to cherry out the pickup, but he procrastinated for many years.

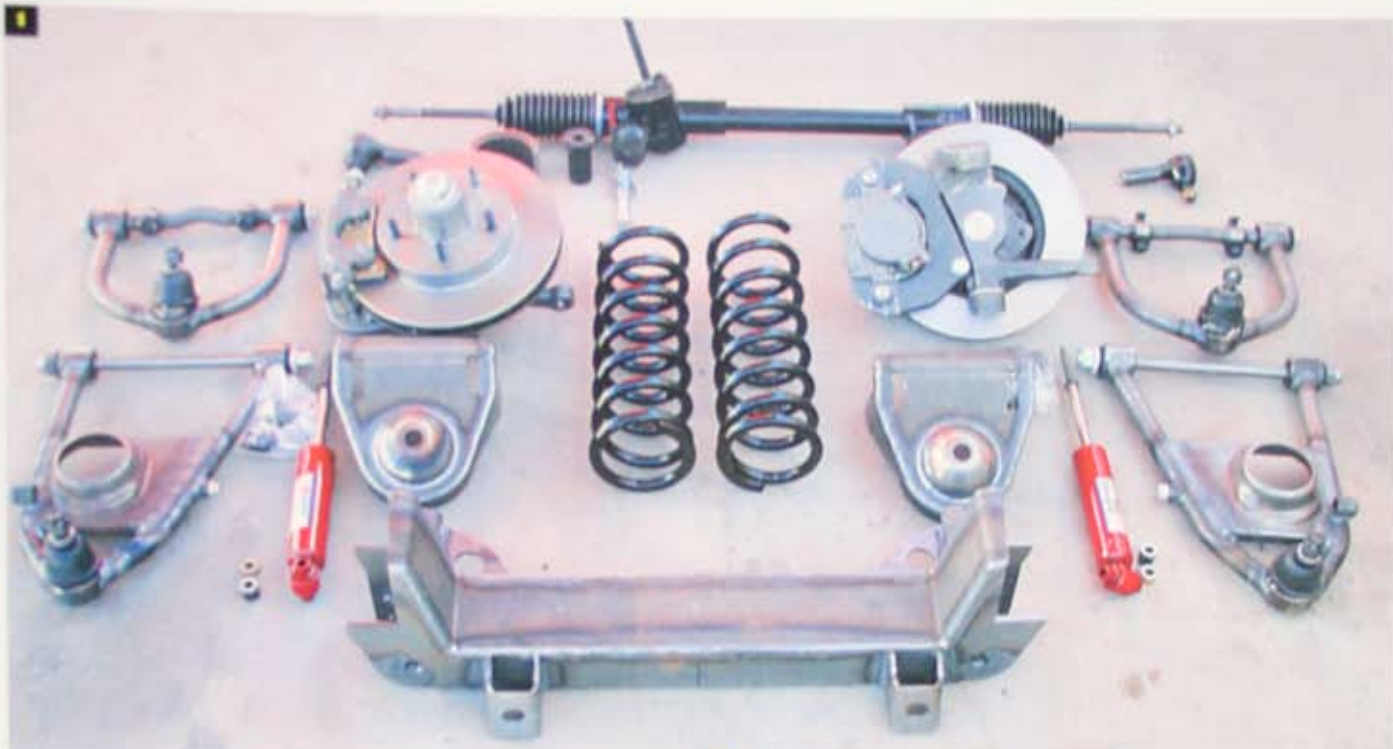
Everett finally decided that it was time for an update and he had several goals in mind. He wanted to improve the truck's ride and handling, and he wanted it to sit really low. Everett delivered the truck to Dream Cars and told the owner, Don Shuter, what he was looking for. Shuter told him that the chassis should be updated with a front and rear suspension kit from Total Cost Involved Engineering (TCI). The Mustang II-based independent front suspension will get the front sitting super low and in the process, it would improve the ride and handling of the truck. It was just what Everett was looking for, so the truck was finally getting some of the improvements it needed.

The TCI suspension kit fits Chevy and GMC pickups from '47 to early '55 and includes tubular upper and lower A-arms, a new front crossmember, coil springs, shock absorbers, rack-and-pinion steering and a complete disc-brake kit.

This is a weld-on kit, so to install it you need a heavy-duty MIG welder, grinder, plasma cutter or 3-inch cut-off wheel, angle finder, floor jack and an assortment of hand tools. If you have always wondered how a front suspension is installed, we'll give you a look at how Dream Cars installed this TCI kit. **TB**

## Sources

**Dream Cars** Dept. TB, 4265 Apricot Rd. #A, Simi Valley, CA 93063, 805/306-9265 **Total Cost Involved Engineering** Dept. TB, 1416 W. Brooks St., Ontario, CA 91762, 909/984-1773, [www.totalcostinvolved.com](http://www.totalcostinvolved.com)

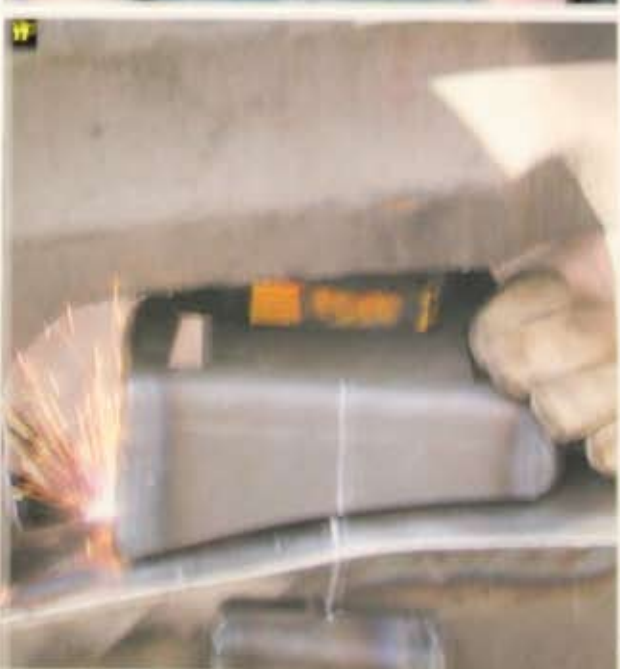


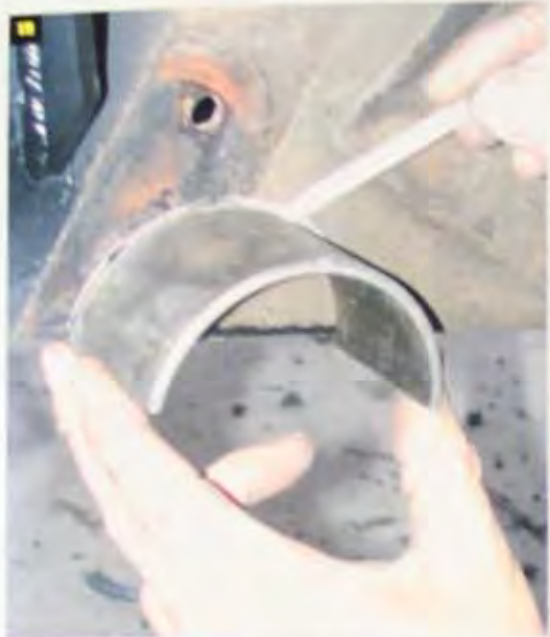
**1.** The suspension kit comes complete with a front crossmember with spring hats, coil springs, tubular upper and lower A-arms, shock absorbers, rack-and-pinion steering and GM-style disc brakes. Dream Cars utilized the box plates, which are included in the kit to strengthen the frame. **2.** The stock suspension features an I-beam axle riding on a pair of parallel-leaf springs. The same suspension style was used in the '20s. **3.** Here's a look at the suspension from the inside of the engine compartment. The truck uses an open C-style frame. Some work will be needed here to strengthen the chassis. **4.** Don Shirer started the installation by cleaning up the chassis and grinding the edges to bare metal.



5. The kit includes boxing plates for the chassis. They come pre-cut, so Shirer held them up to the chassis to see how they fit. 6. The boxing plates were a perfect fit, so he clamped the driver's-side plate to the frame and tack-welded it in place. 7. Here's how the boxing plate looked after it was tack-welded. The plate is pre-cut and is a perfect fit. Now it can be finish-welded to the frame for extra strength. 8. Here's the boxing plate after it was finish-welded to the chassis. Boxing plates were added to the driver and passenger sides of the frame. 9. Following the measurements included in the kit, Shirer found the cross-member centerline. It was marked on the inside and outside of the frame. 10. The cross-member centerline was marked and then it was jacked into place in the chassis. Following the measurements, the crossmember was aligned with the marks on the frame. 11. The upper hats or spring towers had to be installed next, but the inner fenderwell was in the way. Shirer scribed an outline on the inner fenderwell of what needed to be removed. 12. Following the drawn line, he cut the section out of the inner fenderwell with a plasma cutter. This could also be done with a 3-inch cut-off wheel. 13. Here's the hole he cut out. At this point it's not perfect, but Shirer will come back and clean up the hole. 14. The hats were held in place to see how they fit. The TCI kit is very well designed, so the hats fit perfectly. Notice how the centerline of the upper hat lined up with the line on the frame. 15. It is important to get the crossmember sitting at the correct angle specified in the kit. This is done with an angle finder. When the crossmember was perfect, he tack-welded it in place. All of the measurements were checked again, then the crossmember was finish-welded to the frame. 16. The hats have to sit at the same angle so the springs will line up properly. Shirer found the correct angle and clamped the hat to the frame. 17. When the hat centerline was aligned with the line on the frame and it was at the correct angle, it was tack-welded in place. Shirer checked the measurements again and when he was sure they were correct, the hats were finish-welded to the frame.







**18.** This suspension system comes with rack-and-pinion steering and it has to sit high in the frame to get the correct steering geometry. In order to get it where it should be located, the frame has to be C-notched for clearance. Using the C-notch in the kit, Shirer drew the outline of the curved section. **19.** The frame was cut with a plasma cutter to remove the curved section. This step could be done with a 3-inch cut-off wheel, but it would take more time. Time is money in a professional shop, so Shirer does it the quickest way possible. **20.** The plasma cutter produces a nice clean cut and as you can see from the photo, the frame is about 1/8-inch thick. **21.** The edges were a little rough, so the area that was cut out was smoothed off with a small disc sander. **22.** The C-notch was positioned in the frame and it was a perfect fit. **23.** The C-notch was tack-welded in place. **24.** Here's the C-notch after it was tack-welded in place. Shirer was happy with the fit, so he finish-welded the C-notch to the frame and then ground the edges smooth. **25.** Here's how the crossmember and hat looked after they were welded to the frame. If you look closely, you'll see that he sanded the edges of the boxing plate to get it looking good. **26.** Looking from the front of the truck downward, you can see the crossmember and the brackets on the front. The rack-and-pinion steering mounts to those brackets. **27.** Using the hardware in the kit, Shirer mounted the manual rack-and-pinion unit to the crossmember. **28.** Now that the crossmember was mounted in place, he could install the suspension parts. Shirer started by connecting the lower A-arm with the long bolt supplied in the kit. **29.** The next step was installing the upper A-arm with the special bolts in the kit. The upper A-arm is adjustable so the camber can be set up properly. **30a-30b.** The spindle and rotor are pre-assembled by TCI when you purchase the kit. Shirer installed the entire unit to the lower A-arm first.





31. The spring was installed in the upper hat (spring pocket) first and turned until it was firmly seated. 32. Using a little friendly persuasion, the spring was connected to the lower A-arm. 33. After the spring was in place and seated properly, the lower A-arm was raised with a floor jack until the upper A-arm could be connected to the spindle. Remember that both the upper and lower A-arm bolts are used with cotter keys. 34. The rack-and-pinion steering arms were installed and then connected to the spindle. Make sure the rack is in the center position when you make the connection. The toe-in can be set up with a tape measure temporarily, but the truck will have to visit an alignment shop to get it set up properly. The rack connection should also be installed with a cotter key. 35. We finished the project by installing the shock absorbers. The shock connects to the lower A-arm and the upper hat assembly.

