TURNING A NEW LEAF

Properly Installing a Parallel Leaf-Spring Kit in a '47-'53 Chevy

by Rob Fortier

There's a natural progression of modifications and updates necessitated in order to make one of GM's Advance Design pickups ride, handle, steer, and stop better: IFS, disc brakes, and an open-drive rearend perched atop—not below—a pair of parabolic (fancy name for equally arched) leaf springs being the three major improvements to the original equipment most usually start out with.

Occasionally, aforementioned procedures are performed in "shade tree" settings—the results all depending on the knowledge/skill set of the performer, the tool/equipment/parts used, and the general condition of the truck to begin with. Sometimes, the end product definitely cuts the mustard; other times, well let's just say mustard has a similar consistency to what it resembles.

Doing a job correctly is just as important as using the correct parts from the get go. Case in point: your average DIY open-drive rearend conversion. In the big picture, you obviously gain the benefits of not having a torque tube, as well as the potential ability to lower the back of the truck the width of the axle tube and spring pad, and then some, if so desired. The drawback is potentially having to use the stock leaf springs and shackles/hangers. However, the job can be all beneficial if you simply start out with the right parts to begin with. And in the case of a so-so attempt as we've got here—not a problem, we'll show you how to make everything good to go.

Classic Performance Products was doing a little R&D work for their updated firewall-mount/underdash brake booster kit on a '49 ½-ton recently that had a swapped-

SOURCES

CLASSIC PERFORMANCE PRODUCTS
(800) 830-1724
www.classicperform.com

MILLER ELECTRIC MANUFACTURING CO.
www.millerwelds.com

TOTAL COST INVOLVED
(855) 693-1259
www.totalcostinvolved.com

in Camaro/Nova 10-bolt rearend. It was residing on top of the stock 1¾-inch leafs, which hung off the stock shackles and hangers. The width on the fully welded spring perches was off, as was the pinion angle, and a suitable shock mounting setup had yet to be configured. All in all, a rather unfavorable situation. The solution was simple, though: install a Total Cost Involved '47-'53 rear leaf-spring kit, complete with beefy 2½-inch-wide springs, new bolt-on (replacing the riveted) shackle brackets and forward spring hangers, and tubular shock crossmember with gas shocks. Along with rectifying all geometry issues, installation errors, and updating mechanical components, the rear leaf kit also affords the user—well, the truck—a nice little drop in ride height, typically in the range of 4-6 inches (factoring in the thickness of the axle tube and spring pad when going to "spring under"), depending on the particular setup.

The install/swap is easy, just a bit time-consuming what with the multitude of rivets that must be removed—without damaging the holes in which they reside—in order to rid the frame of the OE cast-iron items. If you're starting from scratch, you'll want to source an open-drive rearend in the 60-inch width range (drum to drum), similar to our 10-bolt, which affords the common 5x4.75 Chevy passenger car bolt pattern as well as the opportunity to easily upgrade to rear disc brakes, which this truck will be getting as well. The only welding required is attaching the spring pads to the rearend housing once your pinion angle has been properly set—something that you'll want to have the forward two-thirds of the driveline components, that being the engine and trans, already installed for.

The job is definitely easier to tackle with the bed, rear fenders, and running boards removed, though not necessary. For that reason, as well as the ability to show the procedure better through photography, we've removed all ancillary items not related to the suspension from the cab back.

01-02 Here's what Classic Performance Products is working with: '49 Chevy 3100 Series with a transplanted Camaro 10-bolt rear. The goal for today (it's a day's worth of work) is to swap out the stock leaf springs and related hardware for a TCI Engineering parallel leaf kit, available through CPP.

03-04 Rivets abound—roughly 20 of them need to be gotten rid of: those retaining the e-brake cable housings are optional, as they can be reused with the adapted e-brake cable from CPP, but the forward leaf-spring hangers and the rear shackle brackets must go.

05 First order of business, however, was to unbolt the stock leaf springs and literally roll the 10-bolt out from under the chassis.

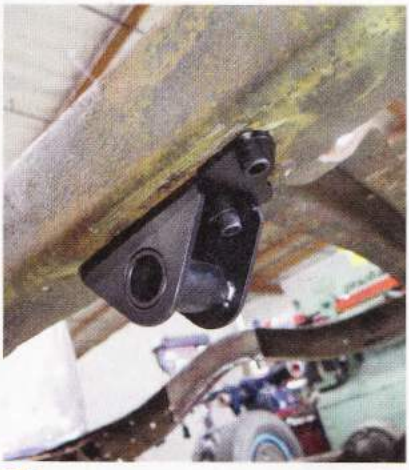
06 The new leaf-spring bracketry bolts directly into existing frame holes—the very holes currently occupied by rivets, thus the need to "carefully" remove the rivets so as not to compromise the holes.

07-08 Of the many methods in which to remove rivets, we've found the following procedure to work very well: grind exterior rivet head flush; center-punch and drill rivet through frame, but not entirely through backside (leaving remaining head fully intact); hammer out using a drift slightly smaller than rivet body.

09 On the brackets mounting directly off the bottom side of the framerail, we simply ground the heads flush and hammered or pried the brackets off.

10-11 As mentioned, the new fabricated brackets locate off the existing holes. On the forward spring hangers, you will need to clearance the flange on the rearmost running board bracket, which is usually easiest done with a large pry bar (take care not to distort the entire bracket itself, as that will affect running board mounting/alignment).

12-13 Once the forward bracket is bolted in place, you will need to drill an additional hole on the underside for a sixth Allen bolt to go nearest the rearend.



14 The forward mounting hole (nearest the cab) for the shackle bracket requires the bolt to be installed from the top; the rear two install from beneath, as shown.

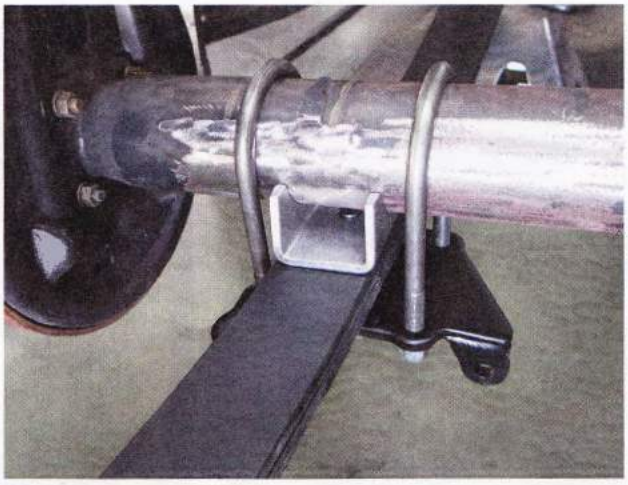
15 As you may or may not have noticed, a prior frame boxing had been attempted. So as not to create a ton more work for ourselves, we simply hacked off the top portion protruding above the 'rail, re-welded flush with the frame, and cleaned up with a grinder.

16... And since the Miller 375 xTreme was already warmed up, we also plasma-cut the existing spring pads off the 10-bolt, leaving just enough to smooth off with a grinder while not getting too close to the axle tubes to cause any warping.

17 With the rearend prepped and all brackets securely mounted, the new 2½-inch leaf springs were installed into the hangers.

18-19 The rearend was set atop jackstands (with the pinion supported via the floor jack), the new spring pads were set in place, and the leaves shackled up in the rear, as such. (Notice by the evidence left by the old U-bolts how far off the original leaf springs potentially were.)

20 The rearend is then centered on the springs and within the framerails—the latter of which is checked (and cross-checked) for squareness in the process.



21 The shackle plates bolt up with the lower shock mounts facing the centersection and toward the rear. The U-bolts are not completely tightened up yet, as we still need to accurately set the pinion angle before tack-welding the spring pads to the housing.

22 Next, the supplied gas shocks are bolted up in preparation of installing the tubular crossmember.

23 The measurement for locating the crossmember is taken off the rearmost bed mounting hole, which according to TCI Engineering is 28⅛ inches. When locating, the important things to consider are shock angle and ensuring the differential cover will not contact the crossmember upon full suspension compression.

24 We marked our framerail accordingly and drilled the upper holes first.

25-26 For the lower hole (it's a "through-bolt" mount) we set the crossmember in place based off the upper holes and marked the framerail below with a transfer punch before drilling a small pilot hole.

27 The crossmember may also be welded in place—just be sure placement is dead-on (shocks mocked up and so on) before doing so.

28 Unlike a link-style suspension setup, the rearend will rotate back upon compression, something to keep in mind when setting the shock angle and crossmember location.

29 Same thought process goes for locating the bumpstops—in other words, do not place them directly above the axle tubes, rather, slightly behind. (The tape on the wrench is aiding holding the Nyloc nut blindly from behind the boxing plate.)

30 Last step before tacking the spring pads in place: setting pinion angle. Basic rule of thumb is to keep the up angle of pinion yoke "parallel to" (not directly in line with) that of the transmission tailshaft/engine crank centerline.

31 With the angles set, the pads can be welded. Ultimately, if you're fully welding the spring pads to the housing, warpage caused by heat is more than likely, thus the importance of having the housing straightened (or at the very least checked for straightness) afterward. For the time being, we put 3/4-inch welds at each corner of the pads.

32 All said and done. Next step is to swap out the drum brakes for an 11-inch Camaro/Nova rear disc brake kit, among other things.