Tubular Impala Suspension

Using Air Ride Technologies CoolRide & StrongArm rear suspension parts for a bolt-in upgrade

by Doc Frohmader

The first series of Chevys using the trailing arm and coil springs started in 1958 and ran through 1964 without much of anything to call a change. These X-frame cars were remarkable in that they began an era where suspensions concentrated more on ride quality than on any kind of nimble handling. I recall driving them. As a rule they under steered and wallowed a bit with soft springs and flexible components. For the times they weren't bad, but then again these days we tend to evaluate suspensions with much higher standards. Most of us would like to improve on what was stock for these cars.

Add to this the fact that we're talking at least 45 years since they were produced. That means some of the suspension parts - most notably the stamped arms - can be damaged or rusted. You have to consider how you want to deal with this. Springs are also old and you can be looking at finding some decent replacements.

Recently Air Ride Technologies came up with a solution that might make some serious sense to owners and builders of these cars. Granted, their motivation was to provide yet another bolt-in air suspension kit to increase their offerings, but in any case they've got some trick parts for us to take advantage of. Specifically, they have a tubular rear StrongArm control arms (upper and lower) along with a stout adjustable panhard bar. It comes either as part of an air suspension conversion or as an independent kit.

The 1959 through 1964 rears use a parallel bar on the left side and sometimes two – one on either side. It's a steel coil spring with separate tube type shock absorber. Although it worked fine, at this stage a lot of the stamped steel arms are getting rusted out and damaged.

There is a spot on the right side where a second arm was used on some cars. You can add this with a little fabrication or if you can scrounge parts from another car so equipped. In both cases, a panhard bar is used for cross- stability.

These are strong parts that do not flex, helping to make your project not only safer but somewhat more stable to boot. The arms are fabricated from 1.5-inch .219-wall DOM steel tube and the panhard from 1.125-inch .219-wall DOM tubing. All are precision jig-welded and powder coated to keep them looking great. The panhard is adjustable and that's very important to those of you who are going with big meats. With limited wheel well room, you want to make sure the axle is exactly centered so you can use the space fully without rubbing tires.

One thing I particularly appreciate is that these parts are all bolt-ins, using the original mounting locations for arms, panhard and shocks. Using the stock coils you need an adapter to the lower trailing arm that you'll have to fabricate, but it can be easily modeled after the original mount. For air springs you need nothing but bolt the springs directly to the arms. No welding, cutting, or drilling is required.

For this installation, the ART CoolRide air springs were used so that's what we'll deal with. Frankly, as well as air suspension works and for the improvement in ride and handling control, I suspect a lot of us will go for the air.

Until the panhard and shock are removed the steel coil is captured. SO the way to remove it is to drop the shock and panhard and lift the frame until the pressure is released from the spring and then just pick it out.

Another aspect to keep in mind is there were different versions of this rear suspension. All use the same lower bars and all use the same shock mounts. What does change is the upper bar/panhard setup. The 1958 cars all used an upper wishbone that looks a lot like an A-arm. It works like a triangulated four-bar and you'll see there is no panhard used. This is a separate version of the ART kit and you need to specify it. The second version uses a single bar on the right side of the axle pig. Because this does not triangulate the suspension, it requires a panhard bar. This is by far the most common of the versions. You need to specify your version to get the right parts.

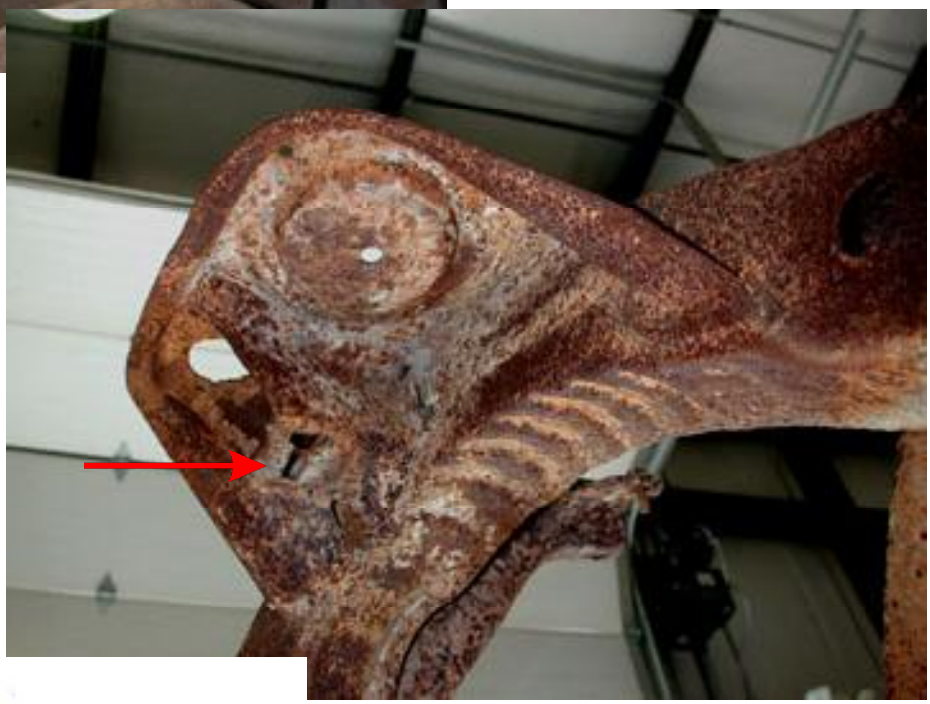
As has been the case a couple times before, I was able to get photos of this installation using the original frames that ART prototyped it on. This allows us to see some details that might otherwise be a little tough to see (although you will see the different chassis' at different times in photos). Check it out...

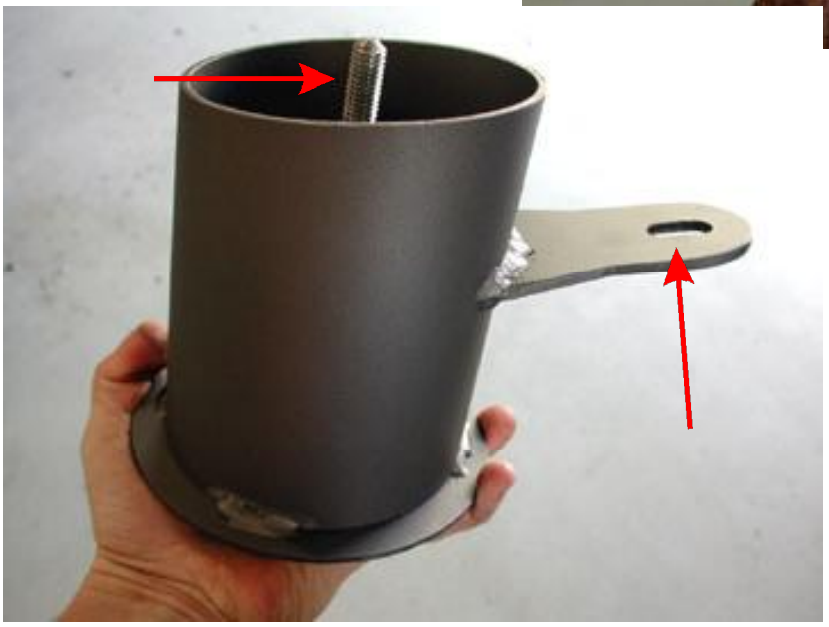
Source:
Air Ride Technologies
350 S. St. Charles Street
Jasper, IN 47546
812-482-2932

The 1958 only full sized Chevies used this wishbone type upper suspension arm. There is no panhard because the side stability is created by the triangulation – an early form of triangulated four-bar.

Some cars will have a bolt-on axle snubber. It is removed and then used as part of the attachment for the new upper air spring mount when going with the CoolRide. You can use the OEM part or one included in the kit.

The snubbers on some cars will use this slot to capture them. The slotted hole is still used to secure the spring mount but in this case there's no OEM mount that will be used.



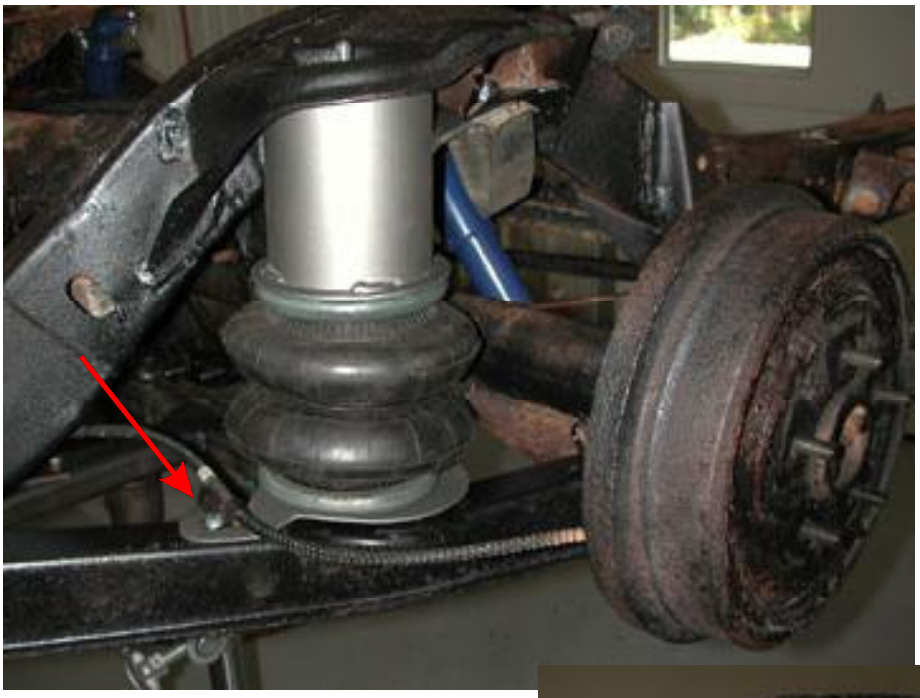


This is the CoolRide upper spring mount. There is a center stud and a side ear that hold it to the frame. Both are designed so there is no frame modification required.

The assembled air spring and mount attached to the original spring tower. Because the CoolRide spring uses the same space as the old spring little if anything requires change – even on a completed car.

Align the ear of the mount before tightening the upper mount.

As you can see, one version of the CoolRide kit allows you to use the original trailing arms. The mount slides inside the original spring pocket mount to secure it side to side and front to rear.

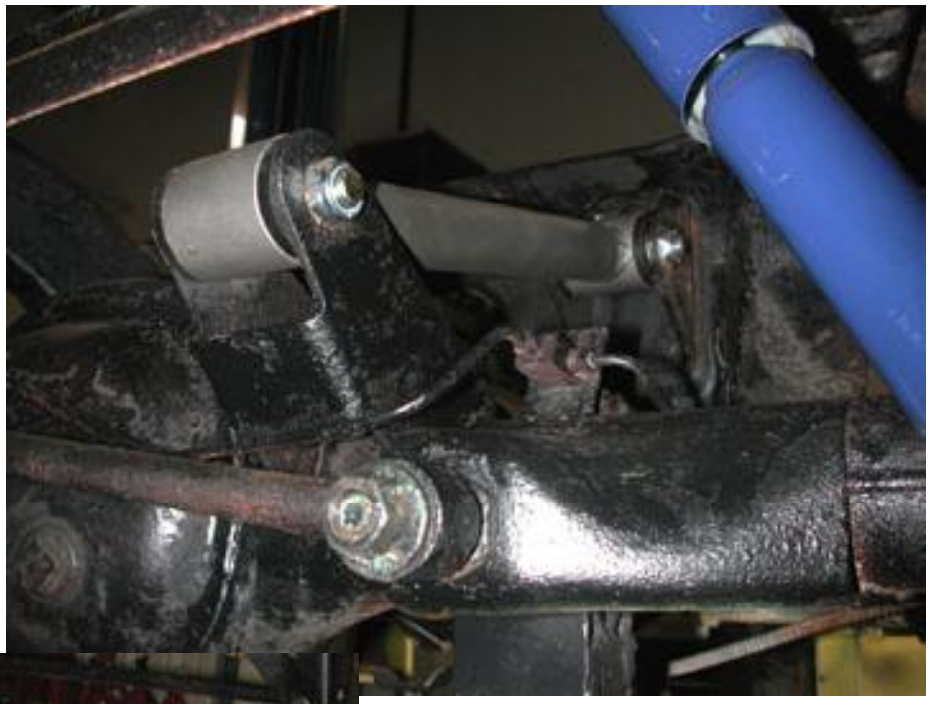


There is a side ear on the lower mount that finishes the mounting to the original arm.

The upper mount when using the original axle snubber with a stud allows you to keep the OEM part.

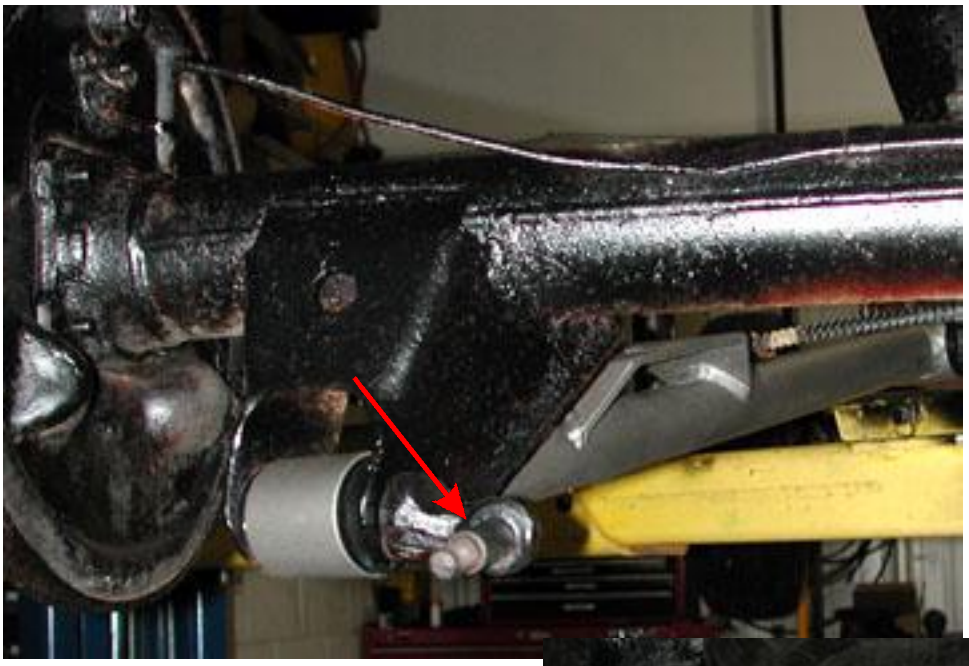
The upper arm type mount is used from 1959-64 . It is removed and discarded.

The new StrongArm is stronger, stiffer, and adds stability to the rear of the car. It also replaces worn out or rusted parts.



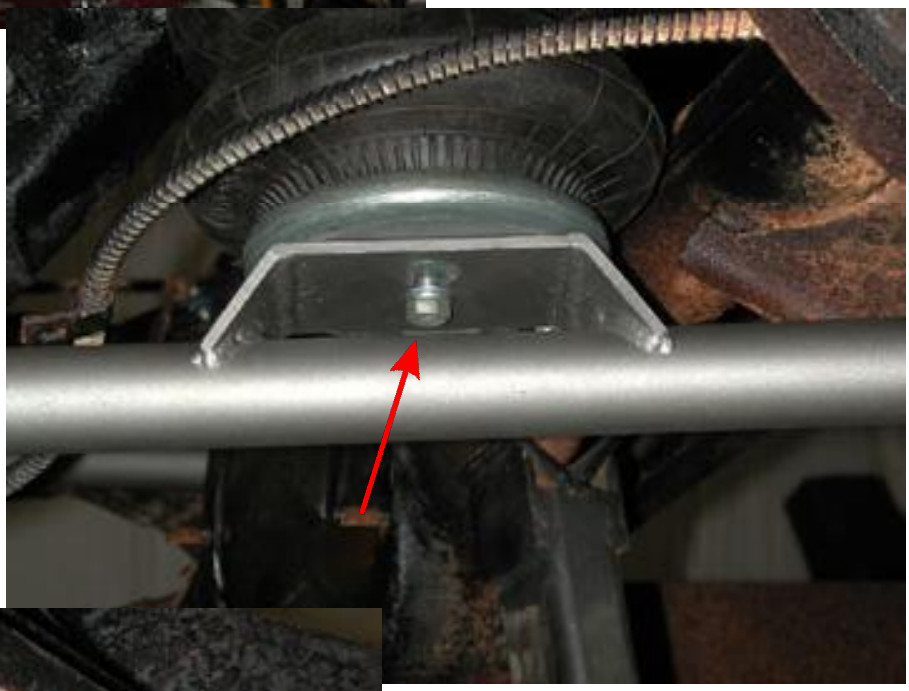
If you are opting for the StrongArms, this lower trailing arm is removed at the pivot points.

The new arms are installed in the original locations. Again, there is no modification to stock parts required.



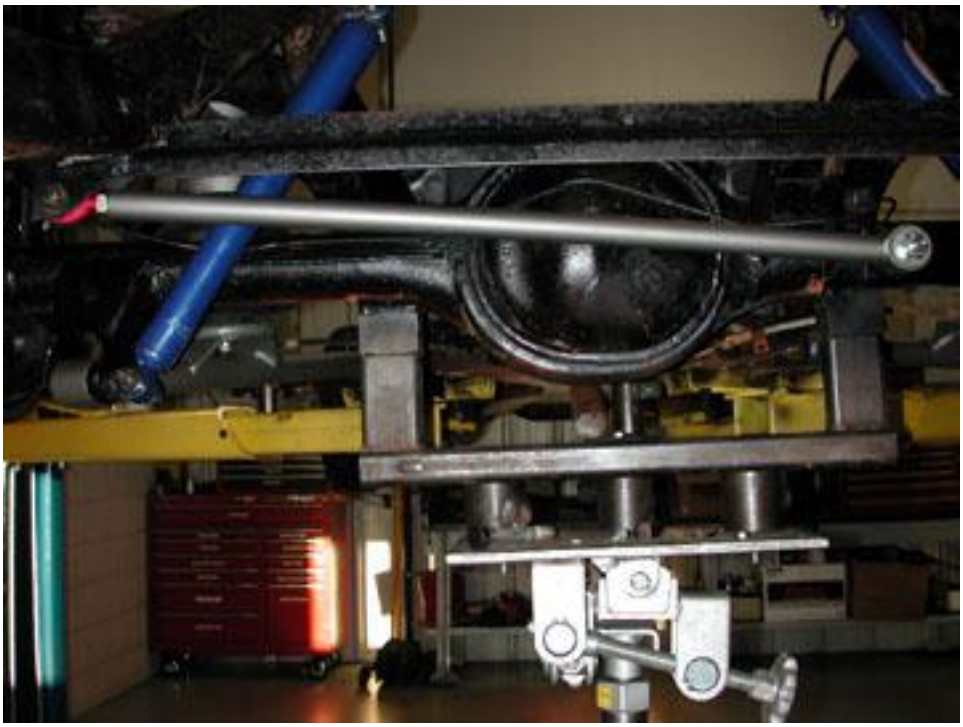
The rear trailing arm mount is also the original shock mount stud. Make sure you preserve this as it is reused.

The CoolRide kit installs with a single bolt when using the StrongArms. They are designed for air suspension.



The new panhard bar mount stud. Remember that all but the 1958 cars use the panhard.

What good are strong trailing arms without a good strong panhard. One asset to this conversion is that all the typically worn and sloppy original parts are replaced, bushings and all, with new, stronger, and better looking components.



The upper end of the panhard mounts with the original GM bracket, but the heim end requires two spacers to center the joint and keep the end snug. Make sure you use them or you'll have a heck of a rattle back there.