



Trimmed Tahoe

1988-98 Tahoe and C-1500 GM trucks front CoolRide air suspension with StrongArm tubular A-arms



by Doc Frohmader

One remarkable point about the GM C-series suspensions between 1963 and 1998 is they were consistent and have been so primarily because they were well-designed, use good suspension geometry, and are simple to work on. It's no surprise then, that so many aftermarket suspension components have been offered over the years for these trucks. With some exceptions, most have been made with reasonable quality and worked reasonably well.

When air suspensions were first

developed some years back, they became some of the more problematic parts of C-series suspension kits. Part of this was the big rush to supply the public with what they wanted as quickly as possible. Unfortunately some production was well ahead of design and engineering so there were some failures. This led to some erroneous suspicion that air suspension was suitable for show trucks – appearance only – and not very practical for street use.



Up front in the Tahoe, this is the complete kit. Almost. In this case ART also added a tubular upper A-arm to complete the conversion. It's simple because the engineering was good to start with.

While some others were rushing to production and blasting low-buck deals at the unsuspecting reader, companies like Air Ride Technologies geared down, dug in, and did the homework. It may be the primary reason they've become the gold standard for air suspension systems and why so few problems with components ever materialize in public. Their stuff works, it is built solidly so it doesn't fail, it is well-designed for both function and ease of installation, and you get good service and support from them.

The result: Not only do Air Ride Technologies suspension kits allow you to drop your ride the way you want, but add function as well. A typical kit will adjust to different loads simply by changing air pressure. CoolRide kits use an application-specific air spring and shock combo for great handling to go with the great ride. Air suspension dampens vibration and suspension harmonics so you get a smoother ride – again adjustable for conditions. You'll also find that the improved stance and unique qualities of air suspension will enhance handling at the same time.



And this is the stock C-1500 type suspension we had to work with. You've got the very same setup if you have a C-1500, a Tahoe, or Suburban built between 1988 and 1998.



So now you have your own C-1500 and are ready to get with it, adjusting your stance and improving suspension ride quality and handling. There are a number of companies you can work with, and some provide parts cheaper than others. What do you consider when making the decision to purchase your kit? After all, most of us don't really want to buy more than one before we get it right. Why would you want to pay a penny more? The answer is, as always, a matter of quality. Why would you select a specific kit over another? The answer has to do with how well it is designed and fabricated. Do you really want to use second-rate suspension parts or parts engineered properly to perform up to your expectations? Is a few bucks worth taking a chance with your safety or being dissatisfied with performance?

All else being equal, why choose one company over another? How about customer service, installation help, and honesty in your financial transaction? Not all companies will treat you with respect. I suggest you make sure you don't just jump at the cheap deal but make sure you have the best value when you place your order.

Sway bars became standard some time back and they've really improved handling. This one will be reused, but must be detached to get the original A-arm out. Remove the shock at the same time.

If you remove the cotter pin and back off the castle nuts a bit (don't remove them!) and give the spindle a good solid whack at the ball joint it will pop but not fly apart. You're using the spring pressure to break it apart.





The bolt and nut through the sway bar mount hole serve an important purpose. The A-arm has to be lowered at an acute angle to release spring pressure and the bolt is used to prevent the jack from slipping and allowing things to get hairy. I use a length of stout chain around the spring and lower A-arm to keep it from flying as well. For someone not used to this I highly recommend a spring compressor.

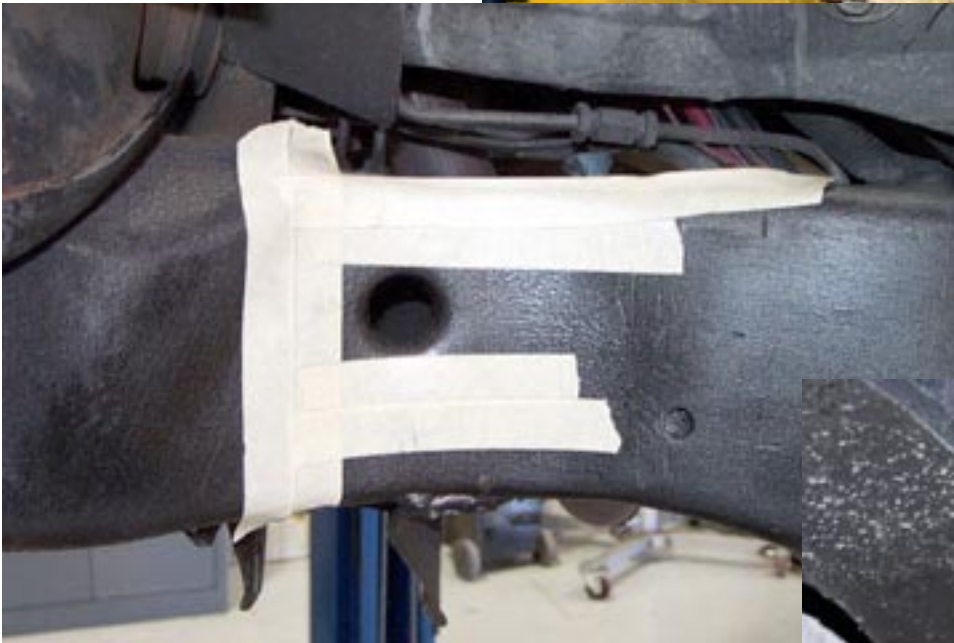
In this case, another reason I find convincing is the Tahoe that's subject of this installation is the personal daily driver of ART chief cheese, Bret Voelkel. If you are the owner of the premier air suspension company, have a stable of vehicles fitted with your products, and can pick what you want to drive, isn't it telling what you drive? The man wants to style a bit and enjoy the ride – even when his wife is co-pilot and his two young kids are strapped in the back seat. That's important cargo.

At the Street Challenge, this same Tahoe stood up to quite a number of wild laps on the Putnam Park road race course and not a single one of the people who drove it on the track, in the slalom, or on the streets stepped out disappointed. I wish I could do a better job of explaining to you how well this truck handled and rode through the entire event, but lacking that I can say there were both professional automotive and truck writers and editors as well as pro NASCAR/Busch drivers equally impressed with the performance.

With the spring out, you can remove the bolts in the lower A-arm and pull it out. Prepare for hard effort – especially if you live in rust country.



Rod Mason, the man with the wrenches, pulled the lower arm out and left the upper hang so the brakes and spindle could hang in place for now. Protect the brake line and ABS wiring!



If you lay some tape around the large hole in the frame just behind the spring tower, it will be easier to read the marks for the new shock bracket.



Use the new mount, centered on the large hole and at 90 degree vertical as the template. Mark the holes as shown.



Drill the holes for the bolts with a 5/16 bit. This gives the new 3/8 self-tapping hardware the correct size hole for proper threading.



I like the way this bracket works because it requires no cutting or frame modification. Bolt the bracket to the side, mark and drill the bottom bolts, and install them to finish.



The air spring, air fitting, long stud, air line, and adapter are assembled as a unit.



The air line is installed in the spring fitting before sliding the spring in place because you can't get to it afterward.

The ART kit includes a CoolRide spring with a new gas-filled shock selected to suit the application, a new upper shock mount, and a new StrongArm tubular lower A-arm with all required hardware. The StrongArms are worth a serious look for several reasons including added strength, but probably most notable is that they've been engineered to optimize suspension and steering geometry. The ball joint mount was changed to prevent binding and to allow proper caster and camber adjustment when lowered – a real problem with stock parts and most aftermarket arms.

This installation is pretty simple up front as long as you read and follow instructions. The major concern you'll face is that you work safe. A good set of jack stands and floor jack are not optional. I suggest you have a short length of stout chain to wrap and bolt around the lower arm and spring as insurance the spring won't pop and fly. Other than that, a drill and a few hand tools complete the weaponry. All original part such as brakes work with the new parts without modifications.

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



The assembly is slipped up into the spring tower and the stud up through the original upper shock mount. No cutting required.



The new lower StrongArm A-arm uses the original hardware and is a direct bolt-in replacement but designed for the new CoolRide air spring.



The lower attachment for the spring is a single bolt through the A-arm. The bolt handles very little stress but simply captures the bottom of the spring.



The shock is now external and you can see how the new upper mount and the mount on the A-arm accept it neatly.



Although the new StrongArm lower A-arm accept most aftermarket components like dropped spindles, big brakes, and heavier sway bars, it neatly accommodates the stock parts.



With the lower together, you can break the upper ball joint apart. If you were thinking, you did this at the same time you did the lower joint, but simply left it connected until now.



While you can use a pickle bar to break the joint apart, that usually means a damaged rubber seal, so the hammer trick works best.



Now you can pull it apart to remove the upper arm, this time with the lower arm supporting the bulk of the spindle/brake assembly. Again, watch that you don't damage the brake line or ABS wiring by allowing this weight to pull on them.

The upper A-arm uses the original mounts, but everything else goes.



The original upper arm hardware is reused. Make sure it's in good shape because it is used for alignment.

Again the upper arm is a direct bolt-in so it's not scary at all.



Use the bolt on the ball joint to secure the ABS cable. This is an important part that does not like abuse.



From the top you can see how the spring assembly is attached and also how the air line is routed.



Done and done. It's not only good looking but it works well. I find that ART spends a lot of R&D time to make sure there is a simple elegance to its components.