



Tech Articles

Custom Suspension

by Lothar Bacher

The 1996 outdoor activity season has come to an end. It was a fun year for me going to all the car shows - especially getting awarded with trophies for all the work I did on my little toy, the 1987 Silver GT.

After the body changes I made last year, I finally got rid of the heat build up in the engine compartment. The new exhaust system is working out well to help reduce the heat. Also, my wire wheels have added a little extra to the appearance of my Fiero.



The body now complete, the next step for me was to improve the handling. Since first owning my Fiero, the front end just did not feel right to me. After some investigating, I found rubber bushings that were soft and worn. So, I decided to replace them with polyurethane ones. However, during this changeover, I started talking to *RCC Specialty* out of Texas and ended up ordering new control arms with adjustable coil over shocks and oversized brakes for the front end. I guess I was thinking that as long as I am removing the control arms, I might as well do the entire job right the first time. I thought maybe one to two days of labor would be all it would take. Not so!

Removing the old arms, springs, and shocks was not a problem. However, installing the new arms became a problem because they did not line up correctly. Fortunately, *RCC* was very helpful. After a lot of measuring, I finally found out why this was causing a problem.



Ever since I purchased my Fiero back in 1987, it never seemed to handle the way I thought it should. This is hard to explain, but at speeds over 70 MPH, my Fiero became very unstable. I complained about this problem to the Pontiac Dealer (under warranty) and they told me that the speed limit is only 55 MPH. So, I went to another Pontiac Dealer and they said they could not find anything wrong either. As a consequence, I gave up. Now, nine years later, I found that the control arm mounting brackets were not lined up properly from the factory. Measuring centerline of each wheel, diagonal and across, I found that that the car was 9/16" out of alignment!

RCC Specialty suggested that I bend their lower front control arms to make them fit properly and then return these bent arms back to them so they could make ones that would custom fit my Fiero. Upon completion of these new arms, *RCC* sent them to me via US Mail next day delivery. Unfortunately, the postal service lost my package. So, *RCC* had to start making my custom fit arms all over again!! Three days later, they finally arrived via UPS and one week

later, the post office delivered me the first set of arms. During all of this waiting, I was unable to make some of our car shows.

Yet even after all of my measuring, the new arms still needed a lot of grinding, bending, and some other modifying to make the new arms fit correctly. Now the next problem I had was to find someone to align my new front end. I did find a shop in Joliet that could adjust the camber, caster and toe to the specs that I wanted, or so they thought! They ended up damaging my lower front air dam by getting too close to the curb. Oh well, I guess that there is nothing that time and money can not fix. So I took my Fiero home to repair and repaint the air dam. But, after all of this, I found out I still did not like the alignment job they did. So I was back to square one.

After several more phone calls to alignment shops I did find another one right in my own neighborhood. This shop was quite impressed with the work I had done with the new control arms and shocks. They re-adjusted the caster, leveled the car across the front, reset the new adjustable ball joints and now, FINALLY, I was impressed with how well the car handled after all these years. It does ride a little bit harder, but the handling is superb.

My new coil over shocks are adjustable so as I can raise or lower the car as needed depending on the handling I am trying to accomplish. However, I cannot lower the front end too much because it will not work on our streets due to the front air dam being so low to the ground.

Now that my ordeal with the front suspension was over, I decided it was time to change the rear suspension. This time around, though, I was prepared for anything to happen. But, to my surprise, everything fit perfectly with no rework needed what-so-ever, including the brake work. The only minor problem I came across was installing the emergency brake cables. However, after a phone call to *RCC*, I was able to get everything worked out.

The new oversized brakes are very effective and on account of the adjustable shocks both front and rear, I was able to lower the car and make sit level. No more wide open wheel wells on my toy!

Showing my Fiero at all the car shows that our club participated in this past season gave me the opportunity to meet a lot of good people and to talk about many different types of modifications and upgrades that other members have done to their Fiero's regarding handling and appearance.

During the last two years, I have learned a lot about my 1987 Fiero GT. I think it is a good looking car. It has lots of STYLE. Now I have solved my problems with more airflow through the radiator and eliminated the ill placed muffler by installing headers (while still keeping the exhaust noise down). Keep in mind that we do still need a catalytic converter and also that the police and your neighbors both do not appreciate noisy cars if you consider changing from the stock exhaust system.

Looking back, it was not absolutely necessary to change the suspension for going to and from work everyday, but I am very fussy about handling. So, I did it right the first time and now I feel the results I have always been looking for. Now that my Fiero is lowered, it changes the whole appearance as it drives down the road. It looks fast and unique. But, I have to be careful that I do not lower it too much because gas stations and highways do not have level driving surfaces. Also, if I get a flat tire and need a tow truck, how am I supposed to hoist the car up onto the tow truck? Considering the cost of lowering your car, towing

services, and damages to the body panels, a little bit of change is ok, but too much can become costly.

After all the time I have spent making my Fiero a good looking, functional, and safe vehicle, I started thinking about what I can do next. Just about the only thing left is the engine. So, I began to read up on engine modifications and have already made several phone calls to talk with the experts on engine swaps, turbo chargers, and blower applications. I now know so much, I could write my own book!

First of all, I have learned that the Fiero was designed to be an everyday driver and that any major change that you make to the power plant will create a domino effect on other areas of the car. For instance, weight distribution, handling, suspension, tire sizes, brakes and ground effects can all be effected by any change you make to the power plant. In its present state, the Fiero was not designed to be powered by a 400 HP V-8 engine unless you want to use the car strictly for sporting events. But even then, you also need to be prepared for other changes that may need to be made. (Having a rich uncle as a sponsor can help out with this!) But as long as time and money are not an object, anything can be done.

If you are considering undertaking a large project like this, I would suggest you do a lot of research, analyze your yearly budget, and ask a lot of questions before you even consider buying the parts necessary. Major changes can be very impressive to show off at car shows or to experience on a Sunday afternoon drive in the country, but remember our speed limit is only 55 MPH and that 100 MPH tickets are not cheap! But on the flip side, heat building up as you are sitting in a traffic jam or driving in Downtown Chicago can have costly results too. Thus, as the old saying goes, you cannot have the cake and eat it too.

However, all of this is just my personal opinion based on research and my own personal experiences. I enjoy sharing my experiences with all of our N.I.F.E. club members. So, now for, me it is back to the drawing board this winter to come up with some new ideas for my 1987 GT toy. Hope to meet more of you at some of the club activities in 1997. Here's to a successful season on the road!

Sources:

RCC Specialty Products - Brake and Suspension Specialists
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