

Suspension Upgrades for your Fiero

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Suspension Upgrades:

Discussion Topics

- **Tires:** Stagger, Weight, Ratings
- **Roll Reduction:** Sway bars, Sway Bar Bushings, End Links
- **Lowering:** Lowering Ball joints, Lowering Springs, Coilovers
- **Suspension Deflection:** Bushings & Rod Ends
- **Geometry Improvements:** Lateral Link Relocation



Suspension Upgrades:

Tires - Why?

- Tires are the connection to the road
- Great tires improve handling of poor suspension
- Poor tires reduce handling of great suspension
- Tire choice is very application & budget specific

- Properly size the tires for your application, then find the lightest, stickiest tire within your budget



Suspension Upgrades:

- Stagger widths front & rear
- Ratio should match F/R weight bias
- Equalizes pressure and temperature
- Coefficient of friction f/r more consistent
- 44% / 55% typical F/R weight distribution
- Less stagger still provides improvement vs. stock

Tire Stagger

Balanced

Tire Combos:

- 205/265
- 215/275
- 225/285
- 235/305
- 245/315



Suspension Upgrades:

Tire Weight

- Weight is a parasitic drag on performance
- Impacts acceleration, deceleration, and performance.
- Weight increase should be avoided if possible
- Some applications perform better with heavier/wider tire

- Lighter wheels allow heavier/wider tires with minimal weight



Suspension Upgrades:

Tire Ratings

- Tread Wear - 200 or less for the softest compounds
- Traction: AA is > 0.54 g-force on asphalt
- Temperature: A = > 115 mph
- Speed Rating: H, V, Z, W, Y, (Y) all rated > 130 mph
- Minimum Temperature: 50 degrees for many high-performance tires



Suspension Upgrades:

Tire Example ~\$1500+

- Stock Fiero 215/60/15 tire 20 to 24 lbs.
- Stock Fiero 15x7 wheel = 18.5 lbs.
- **Total weight 38.5 to 42.5 lbs**
- 17 x 7.5 Enkei PF05 = 18.4 lbs
- 215/45/17 examples are 19 & 22 lbs.
- **New wheel & tire package = 37.4 to 40.4 lbs**



MICHELIN PILOT SPORT CUP 2 CONNECT (240)

Extreme Performance Summer

★★★★★ (29) | Reviews (25) | Consumer Recommended



\$276.53
Per Tire

In Stock
Delivery by Friday, 11/17 to 61822

Size: 215/45ZR17 (91Y) XL
240 AA A
Style: **Blackwall**
Load Range: XL

Serv. Desc: (91Y) ?
UTQG: 240 AA A ?

TOYO PROXES R1R

Extreme Performance Summer

★★★★★ (90) | Reviews (81) | Consumer Recommended



\$180.10
Per Tire

2 In Stock
We will provide a date based on availability at our supplier after receiving your order for 3 or more

Size: 215/45ZR17 87W
Style: **Blackwall**

Serv. Desc: 87W ?
UTQG: 200 AA A ?

**Fieroguru
Performance LLC**

Suspension Upgrades: Roll Reduction - Why?

- Rear suspension - minimal camber gain
- Especially during body roll around corners
- Reduces contact patch, increases heat, and reduces traction
- Less roll = less camber loss = less static camber needed = more available traction



Suspension Upgrades:

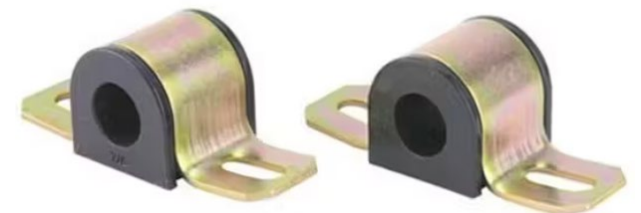
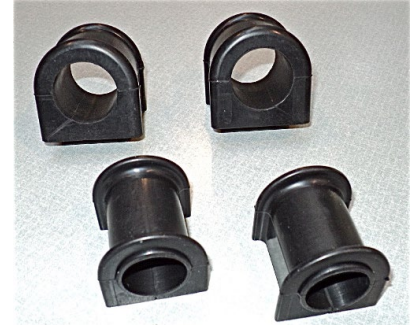
Sway Bar ~\$500

- 88 Fieros: Addco - discontinued
 - Front part # 539 = 53% stiffer
 - Rear part # 445 = 72% stiffer
- 84-87 Fieros: The Fiero Store
 - 57032 Front = 1" vs 23mm ~ 50% stiffer
 - 57032 Rear = No stock bar
- Pros:
 - Decreased roll, better contact patch, less static camber, better tire wear
- Cons:
 - \$\$\$ and transmits more road irregularities



Suspension Upgrades: Sway Bar Bushings ~\$50

- 88 Rubber Sway Bar Bushings: Fieros: Rodney Dickman
- 84-87 Poly Sway Bar Bushings: The Fiero Store
- Pros:
 - Rubber restores to stock,
 - Poly bushings are stiffer, deflect less, roll less.
- Cons:
 - Rubber - none
 - Poly - Squeaking



Suspension Upgrades: Zero Lash End Links \$125

- 84-88 Front and Rear: Rodney Dickman
- Pros:
 - Zero deflection, makes any sway bar feel stiffer, sealed from elements
- Cons:
 - Cost



Suspension Upgrades:

- Lower Center of Gravity
- Less body roll in theory
- Less frontal area - more aerodynamic
- Looks better!

Lowering - Why?



Suspension Upgrades: Lowering Ball Joints ~\$100

- 84-88 Front $\frac{1}{2}$ " and 1" drop: Rodney Dickman
- Pros:
 - $\frac{1}{2}$ to 1" drop, stock ride quality, stock suspension travel
- Cons:
 - Only works on the fronts,
 - Sometimes need longer sway bar end links
 - Interference with large brake kits on 88s



Suspension Upgrades:

Lowering Springs ~\$350

- 84-87 Front & Rear: Eibach 3802-140
- Pros:
 - Name brand supplier
 - Approximate lowering of 0.8" front/rear
- Cons:
 - Unspecified stiffer spring rates
 - Relocate bump stops to maintain suspension travel



Suspension Upgrades:

- 84-88 Rear: Fieroguru Performance
- Pros:
 - Made to your application
 - Choice of colors and spring rates
 - Adjustable Lowering between 0" - 3"
 - Stainless steel washers, nuts & studs
- Cons:
 - Cost



Rear Coilovers \$750



Suspension Upgrades:

Suspension Deflection - Why?

- Toe & Camber are critical to performance
- Both change significantly with A-arm & cradle bushing deflection
- Limiting deflection improves tire contact and allows more precise suspension settings.



Suspension Upgrades:

Rubber Bushings ~\$175

- 84-88 Front: The Fiero Store
- 84-87 Rear: The Fiero Store
- 88 Rear: Rodney Dickman
- Pros:
 - Improvement from 35+ year old bushings
 - Stock ride quality
- Cons:
 - Stock and will deflect under aggressive loads



Suspension Upgrades:

Poly Bushings ~\$100

- 84-88 Front & Rear: The Fiero Store
- Pros:
 - Cheaper and less deflection than rubber
- Cons:
 - Squeaks
 - Transmits more road irregularities



Suspension Upgrades: Rod End Lateral Links \$300

- 88 Rear: DIY parts list @ Fieroguru Performance
 - Summit Racing & McMaster Carr
- Pros:
 - Zero deflection - optimal toe control
 - Near zero impact to ride quality
- Cons:
 - Wear - 1-3 years
 - Cost



Suspension Upgrades: Alum Cradle Bushings \$125

- 84-87 Rear Cradle: Rodney Dickman
- Pros:
 - Solid mounts cradle like the 88s
 - No suspension changes due to cradle bushings
- Cons:
 - Cost
 - Transmits more road irregularities



Suspension Upgrades: Geometry Improvements

- Lowering the rear of an 88 1-1/2" *INCREASES* roll 17%
- Exact opposite of what is wanted.
- Cg is lowered 1.5", roll center lowered 4.3" = more leverage for body roll
- It also reduces the rear anti-squat
- Fix is to change suspension geometry



Suspension Upgrades:

Lateral Link Relocation \$450

- 88 Rear: Fieroguru Performance
- Pros:
 - Restores suspension geometry to stock on an 88 lower 1 $\frac{1}{2}$ "
 - Reduces roll on lowered 88s
 - Restored anti-squat to stock
- Cons:
 - Cost
 - 17"+ wheels required



Suspension Upgrades:

Summary

- Wide range of suspension upgrades available
- Large range of cost per upgrade
- Suspension upgrades are all about compromise
- Everyone will weigh the compromises differently
- Enjoyment of the drive is more important than peak performance!



Suspension Upgrades:

Questions?

- Questions?

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