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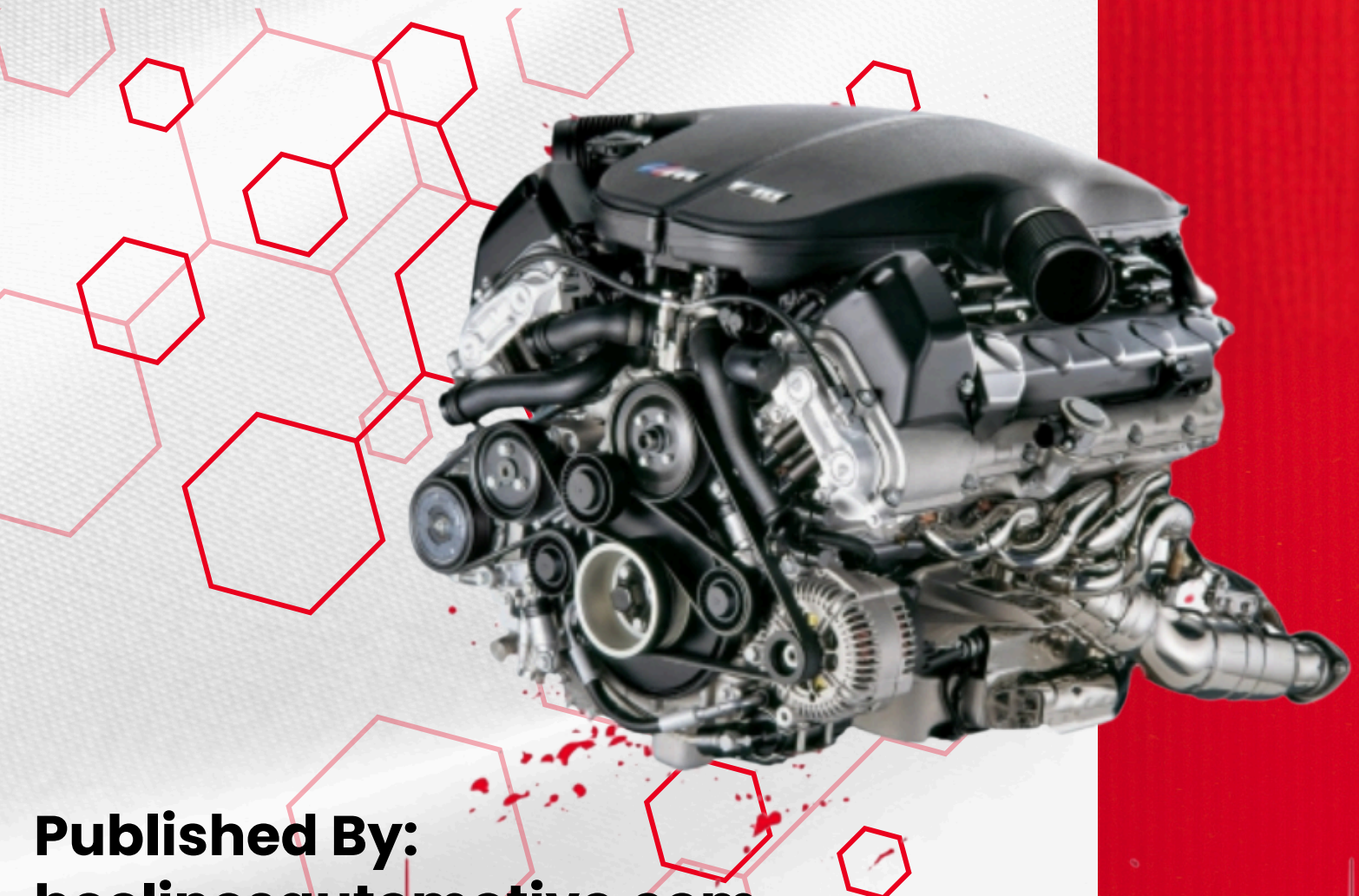
USER MANUAL - FORD SHELBY GT500

Suspension Modifications for Engine Swaps or Power Gains in a 2010 Ford Shelby GT500



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1. Introduction

Vehicle Model Covered: 2010 Ford Shelby GT500

Vehicle Platform: S197 Mustang

This guide lists what suspension changes should be made when swapping an engine or adding serious power to a 2010 Shelby GT500. Stock suspension is only good up to a point. Once the car's power goes up, or a different motor is installed, the suspension must be updated to keep the car safe and controllable. Every bit of info given here is as practical as it gets. You can follow the steps to the word.

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2. WHEN TO MODIFY THE SUSPENSION

Suspension needs attention if:

- Horsepower goes over 600
- The engine you're installing is heavier or lighter
- You plan on hard launches or track use
- The ride feels sloppy or uneven
- If you have specific types of tires that need specialized suspension
- You have lowered the car

You don't need to upgrade everything at once, but don't ignore the basics. The faster the car, the more important this gets.

3. FRONT SUSPENSION CHANGES

Struts and Springs

Factory struts work fine for stock setups. If you're adding more weight or torque, switch to adjustable coilovers. Make sure spring rates match your use — firmer for track, balanced for street.

Camber/Caster Plates

If you've changed ride height or want better tire contact mid-corner, install adjustable camber/caster plates. These help with alignment and control.

Sway Bar (Front)

Upgraded sway bars help keep the car flat in turns. Get a thicker front sway bar if the car feels too soft when turning.

Control Arms and Ball Joints

If your engine swap affects front-end weight, it's smart to upgrade to stronger lower control arms and performance ball joints.

K-Member Replacement

If you're swapping in a motor that's bigger or needs more space underneath, get a tubular K-member. It also reduces front-end weight slightly.

4. REAR SUSPENSION CHANGES

Rear Shocks and Springs

Extra horsepower puts more stress on the rear. If the springs are hard/stiff they will keep the rear end of the car near the road. This is necessary during high speed launches or fast shifting.

Upper and Lower Control Arms

Replace the stock ones with boxed or tubular versions. Helps control axle movement under load.

Rear Sway Bar

Round corners or during lane changes sway bar has to bear the pull of the engine. If the car feels a bit

Pan-hard Bar or Watts Link

If you lower the car or notice the rear axle sitting off-center, get an adjustable pan hard bar. For better lateral control, install a Watts link system.

Rear Axle Note

If the engine has higher range of power (650+ Horsepower in this case) only reinforced axels can handle the pressure. If you're running on stock axels it will most likely give up in minimal time. Notice if there is any kind of clunking or wheel hop when you run the car.

5. CHASSIS STRENGTHENING

Sub-frame Connectors

Weld-in or bolt-on connectors add stiffness to the body. Especially useful on older S197s showing flex during launches or cornering.

Strut Tower Brace (Front)

Keeps front-end geometry in check and reduces flex. It won't fix bad shocks, but it helps when combined with other upgrades.

Torque Box Plates (Rear)

Torque boxes take a beating with hard launches. Add reinforcements before they crack or deform.

6. ALIGNMENT RECOMMENDATIONS

After changing suspension, always get the car aligned. Below is a good street/track baseline:

Front:

- Camber: -1.5°
- Caster: +6.0° to +6.5°
- Toe: 0 or slightly in

Rear:

- Solid axle — just make sure toe is neutral and axle is centered
- Check again after 500–700 miles. Alignment will shift as new components settle.

7. BUSHINGS AND HARDWARE

- **Poly Bushings**

Factory bushings wear out fast once power goes up. Polyurethane bushings are stiffer and help keep components aligned.

- **Solid Bushings**

Best for race use only. You'll feel more noise and vibration. Not ideal for daily driving.

- **Hardware Torque**

Always torque to spec. Don't guess. Use Loctite on control arm bolts and suspension mounts. Look up the exact torque values or use Ford's factory chart.

8. FITMENT AND CLEARANCE

- **Engine Clearance**

With different engine mounts or oil pans, you may need to shift things. Before final tightening sway bar should be checked properly, along with cross-member clearance.

- **Wheels and Tires**

Larger sway bars or coilovers may limit wheel width. Check backspacing. Use a 9” or wider wheel with 18” diameter minimum for proper clearance and braking.

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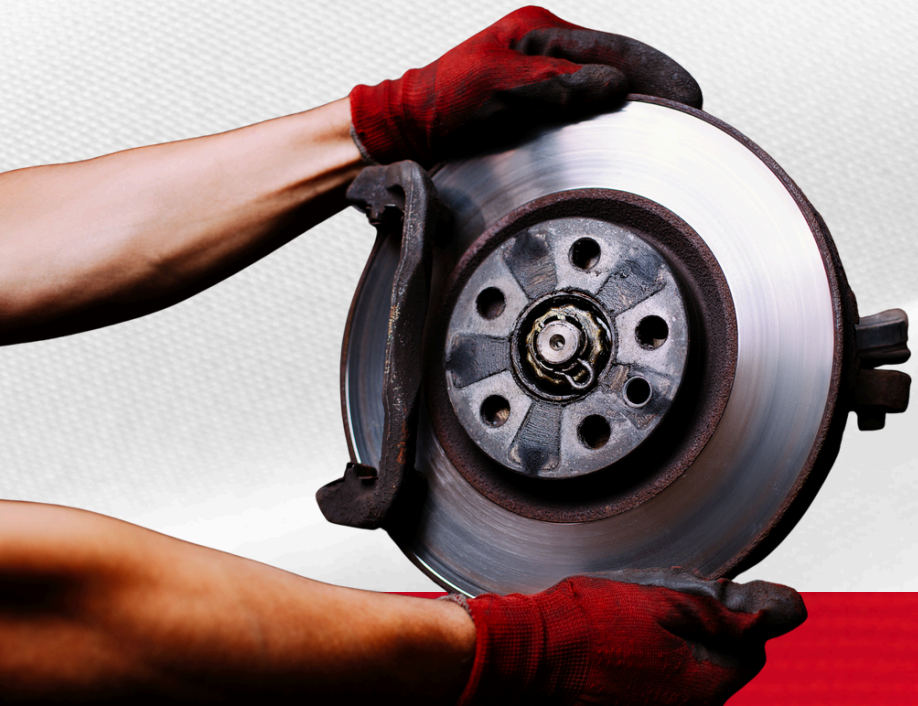
9. BRAKE CONSIDERATIONS

Power means nothing if the car can’t stop. At 600+ hp:

- Use 14” front rotors or larger
- Upgrade calipers to 4-piston or 6-piston
- Use braided brake lines
- Run high-temp fluid if tracking

This keeps the car safe and responsive under pressure.



10. POST-INSTALLATION CHECKS

Fasteners

After the first few drives, go back and recheck all bolts. Some may loosen as parts settle. Focus on control arms, sway bars, and shock mounts.

Test Drive

Drive the car on mixed roads. Listen for clunks or vibrations. If anything feels loose, stop and inspect.

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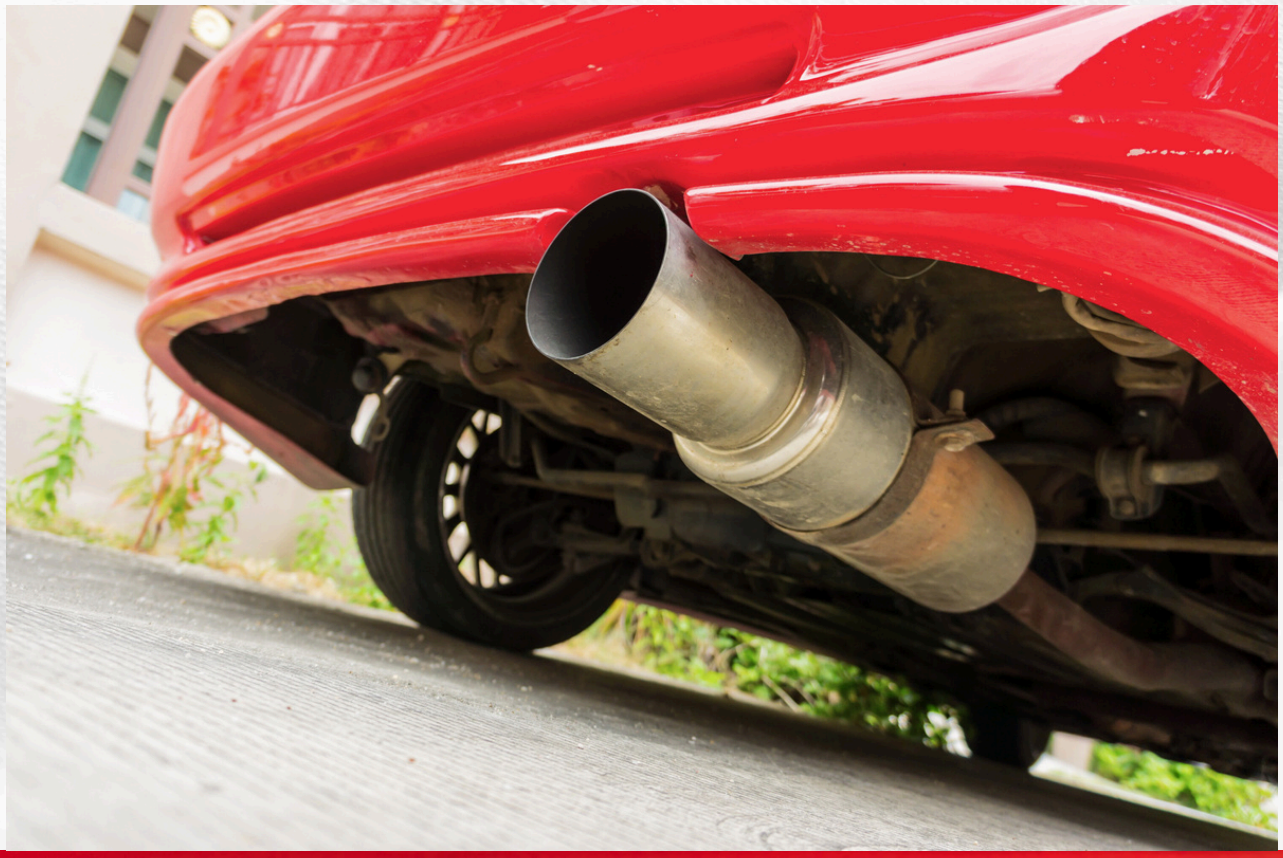
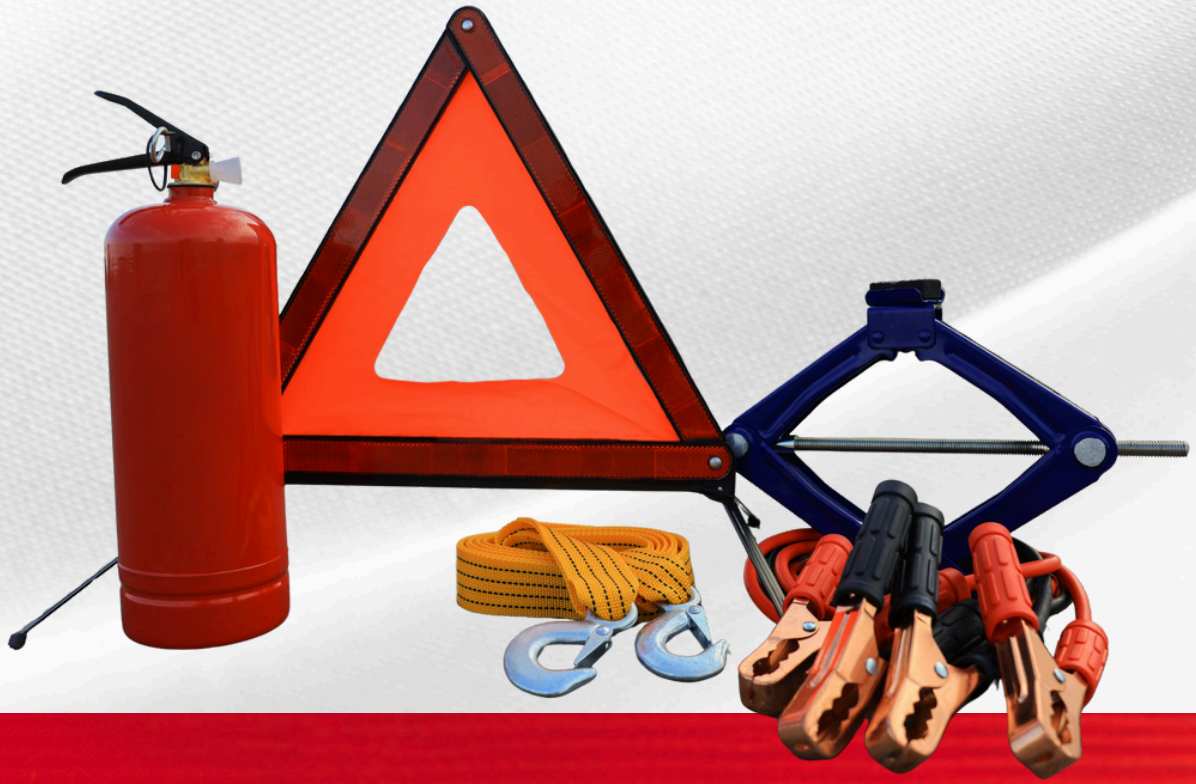
Noise/Vibration

Upgraded bushings and control arms will add some noise. If it's excessive, double-check torque or alignment. Don't ignore knocking sounds.



11. SAFETY AND PART COMPATIBILITY

Use only parts rated for the 2010 GT500 (S197). Don't try fitting pieces from newer Mustangs unless they're made to be cross-compatible. Stick with proven brands. Always double-check torque specs and install notes. If you're unsure, get a shop to verify the setup before road use.



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Thank You

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