Put an Independent Rear Suspension in a 1968 Mustang

Shelby Independence Day: Heidts Automotive builds a fully independent suspended 1968 Mustang G.T. 350 clone using their ProG IFS and IRS bolt-in suspensions

Rob Kinnan Brand Manager, Mustang Monthly

November 30, 2016

Photos By: Heidts Automotive Group

The Mustang's front and rear suspensions were designed in the early '60s, based on similar designs from a decade earlier. They worked just fine—back then. The car had crappy bias-ply tires and lack of a really good-handling domestic car to compare it to, but that was a long time ago. By today's standards, early Mustang suspension is, shall we say, a joke. So much has been learned in the way of suspension design and geometry during the half-century since the first Mustang rolled off the assembly line. Unless you're doing a concours-level restoration, or for some other reason don't want to cut on the car, there's no reason not to convert the suspension to more modern, robust, and far better performing designs from the aftermarket.

Nowadays, many companies offer upgraded suspension parts and kits for early Mustangs. But very few of them give you the option of swapping the rear suspension's stock leaf spring and solid axle setup for an independent rear suspension (IRS) similar to that of the new 2015-later Mustang. Generally speaking, an IRS handles and rides better than a solid axle, and the coilover design allows a lot more options and tuning for ride height, stiffness, and alignment. Plus, it's trick, which can be the main calling card for many people.

Heidts Hot Rod & Muscle Car Parts in Lake Zurich, Illinois, not only offers a modern front-suspension setup for the early Mustangs, but also the aforementioned IRS in a bolt-in kit. "Heidts Hot Rods pioneered the bolt-in IRS rear over 30 years ago," says company owner and president Wallace Leyshon. "Today, it remains the leading industry producer with the only patented bolt-in IRS in the automotive aftermarket (U.S. Patent #8517140B2)."

Leyshon knows his parts perform as advertised and wanted to prove it with his latest project car build, a previously cloned 1967 Shelby G.T. 350 convertible. "The 1967 Shelby has always been among my favorites," Leyshon says. "I wanted to take the approach, 'What would Carroll do if he had all the current engines and suspensions available in 1967, including an independent rear suspension?' I wanted to keep the iconic body and interior exactly the way Shelby offered it in 1967, but update the drivetrain, suspension, and brakes to modern specs."

Heidts selected its Pro-G front and rear suspension, which incorporates a new front clip with upper and lower A-arms, coilover shocks, anti-roll bar, and rack-and-pinion steering. Out back, the Pro-G includes the independent rear suspension (IRS) that's designed with its own tubular cradle, 9-inch center section, coilovers, and inboard brakes.

“This project coincided with the increasing demand for high-performance, pro-touring suspension systems for early-gen Mustangs,” Leyshon says. “It provides superior handling and matches current-model muscle and performance cars. We also wanted it to accommodate the modern and more powerful engines that are now available.” In fact, Heidts tells us the front engine cradle and engine mount options can accept virtually all Ford engines, from 289 and 351 Windsors, to the FE and modular-series powerplants, too.

To perform not just the front and rear suspension installations, but also redo the whole car, Heidts commissioned BlackDog Speedshop in Lincolnshire, Illinois, to build the car according to the vision in Leyshon’s head. This story is not meant to be a bolt-by-bolt regurgitation of the installation instructions. It’s more of an overview of what to expect if you’re thinking about installing this suspension on your own car. (For a detailed look at what goes into the ProG front suspension, see our installation story on a different car at **www.mustang-360.com/how-to/chassis-suspension/1605-geometry-lesson-installing-heidts-pro-g-ifs-in-a-1968-mustang**).

And come back next month as we take the finished car to Autobahn, a “country club” road course outside Chicago to thrash it and see how all these fancy parts work.

01. Heidts Pro-G front suspension is based on the company’s award-winning geometry with a front crossmember to accommodate the newest high-performance Ford engines, including the Coyote. The IFS includes heavy-duty tubular upper and lower control arms, fully adjustable coilover shocks, tight ratio power rack-and-pinion, and massive six-piston Wilwood disc brakes.

02. Recognizing the limitations of a straight axle, their technical design team went to work in applying Heidts award-winning 9-inch Ford based fully independent IRS rear suspension technology to the rear framerails in the Shelby. In our opinion, Carroll would have installed this on all his production cars if it had been available in 1967. (In fact, Carroll did just that in 1965 using prototype parts that never made it to production. See the story we did on that car in the June 2015 issue **www.mustang-360.com/features/1511-tested-factory-designed-independent-rear-suspension-for-early-mustangs**). Note the inboard-mounted disc brakes, which make pad changes a little more difficult, but greatly reduces unsprung weight for better handling.

03. This was the 1967 G.T. 350 clone Heidts owner Wallace Leyshon bought for the project. Yes, we said “clone,” so anybody worrying that they cut up a real Shelby can just settle down.

04. To do the work, Heidts enlisted Blackdog Speed Shop. Blackdog was responsible for complete engine and transmission install, including complete custom exhaust, fuel system cooling, engine transmission master cylinder, and all lines and hoses, as well as interfacing the wiring, and setting parameters of the ECU. “We cannot thank them enough for going above and beyond ensuring ultimate performance,” Leyshon says.

05. The Heidts Pro-G front suspension parts laid out prior to installation.

06. This is the amount of prep work required prior to installing the Heidts kit. You have to remove everything from the engine compartment, including the crossmember and shock towers.

07. Heidts uses this beefy crossmember and shock tower saddles in place of the factory one. The suspension parts all bolt to it, hence the elimination of the shock towers.

08. This is the crossmember fully welded in place and painted. Note the Lizard Skin, which is an undercoat ceramic insulation and sound-control formula by Mascort Corporation of Houston, Texas. “We used a blue tint to match the body, so it provided sound control and thermal protection, as well as meeting aesthetics,” Leyshon says.

09. Here’s the car immediately prior to engine installation.

10. Blackdog installed the 5.0L Coyote crate engine from Ford Performance. Eliminating the shock towers is the only way this wide powerplant will fit in an early Mustang.

11. This bottom shot shows the oil pan and accessories clearance.

12. The transmission is a Tremec T-56 six-speed with a Quartermaster driveshaft (not yet installed) provided by Bruce Couture of Modern Driveline. “Bruce supplied the trans and everything from the flywheel to the input shaft,” Leyshon says. “He possesses a wealth of knowledge and his help with the driveline was invaluable.”

13. Blackdog Speed Shop also bent these pretty stainless fuel lines and all the brake lines on the car.

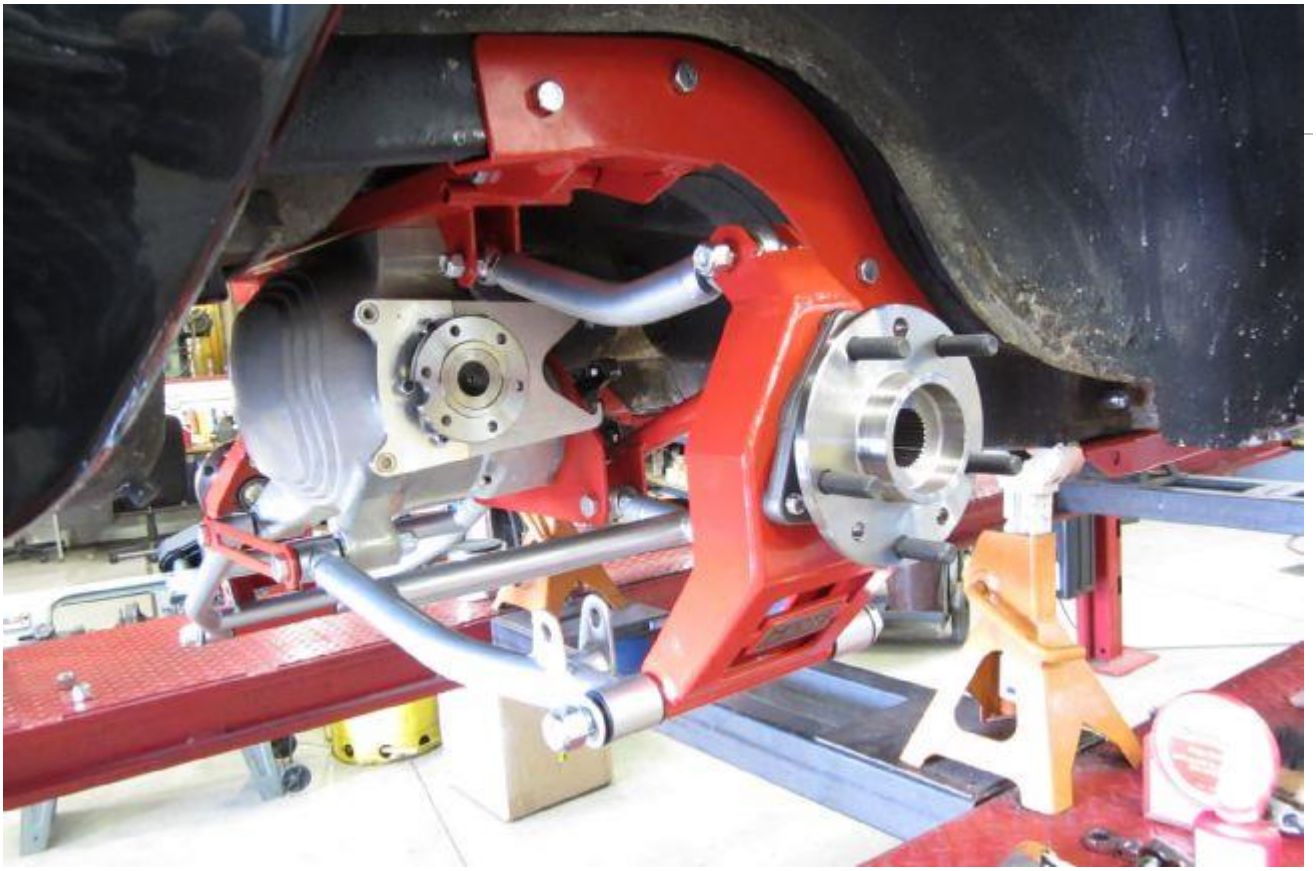
14. When Leyshon bought the car, it had these generic subframe connectors. This is during initial installation of the Heidts. As you can see, the entire rear suspension must be removed. And it makes life easier during the installation if you remove the gas tank, temporarily, too. Now would also be a good time to clean, paint, and undercoat the backside of the car.

15. These Heidts subframe connectors also serve as a front mount for the suspension strut rods.

16. Here's a close-up of the front strut rod mount for the IRS.

17. This is the passenger-side frame saddles, top crossmember, and IRS bare center section mounted during mockup. The center section (differential, ring-and-pinion, axles, and such) comes disassembled and must be put together by the end user.

18. The axle hubs are connected to the lower control arms to prepare for installation into the center section. The center section has been assembled with caliper brackets and axle stubs installed.



19. The upper control arms are installed

20. With coilover shocks installed, it’s getting close to the end.

21. Here's the IRS configuration with the half-shafts and CV joints fully installed.

22. Here, the completed Heidts IRS is installed and ready for action. Now, it will be removed for underside detailing on the entire car.