

# Fatman Fabrications

## 49-51 Ford Chassis Builders Guide



Thank you for your interest in a Fatman Fabrications chassis for your 1949-1951 Ford. Before you begin there are a few things we would like to point out.

First, **Plan Out Your Project!** Knowing how you want it to look when it is finished is just as important as when you start. Do you intend for the build to be hi-tech or old style? Billet wheels or painted steelies? Pro street? Pro touring? Ground scraping as low as you can go? Who is going to drive the car and where will it be driven to? Is it going to be a low mileage show car or a freeway flyer for cross-country cruising?

Establish parameters based on reality and not just wishful thinking. Blown big block motors rarely make good long-distance cruisers. Big inch wheels look awesome on some cars but tradeoff ride comfort for looks by requiring short sidewalls that do not absorb road shock. Remember, there is a tradeoff to everything, so save yourself time, money, and aggravation by planning your project from start to finish.

Also, keep in mind you are building a car. You might be using an old steel body, which is great, but Henry Ford was not very exact in the manufacturing process over 60 years ago and there are minor variations in all old cars.

If a fiberglass body is your choice, then there are some excellent quality glass bodies, but each has its own variations and tradeoffs. Some are not made or designed to fit on a 49-51 Ford chassis. Not everything is exact, and some minor modifications are likely every step of the way, so plan for that and **test fit everything** before you paint or powdercoat anything.

Take comfort in knowing that after building a thousand plus chassis, we have them dialed in and know all the ins and outs.

Our chassis for the 49-51 Ford are constructed of strong 4"x 4" x .188" main rails and 3" x 3" x .188 wall rectangle tubing rear kick up rails. We are known for building the strongest chassis on the market. Each one is made to follow the original shape, form, and to fit with the original body mounts.

Fatman Fabrications chassis include radiator mounting brackets, bumper mount holes, drilled and tapped the topside body mount and gas tank holes.

Another item we have found is that 60-year-old and repro fenders seldom fit together well without some tweaking. We suggest you fit them, then drill and tap fine thread bolt holes into the proper mounting locations. By doing this, the bolt holes will be where you need them, rather than having to stretch a hole in a fender to match a predrilled hole.

We have heard it all including being accused of building our chassis "too heavy duty", but we pride ourselves on a strong, rigid product which you will find is an extra big benefit if you are using a fiberglass body or parts. We also use a strong front crossmember, massive x-member and driveshaft tunnel. All this makes these the strongest chassis available!

You can expect a 2"- 3" drop from stock height with our standard chassis and standard spindles. Air ride, and 2" dropped spindles are options that will put the car radically low.

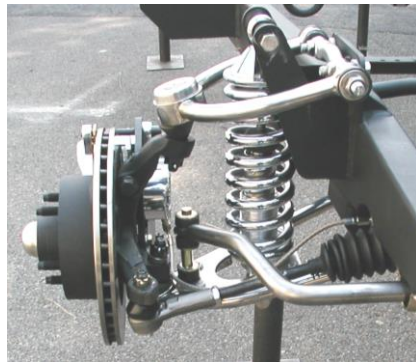
We designed our central tunnel to be a fully complete box that will accept stress without the flex inherent in the open top tunnels seen in our competitor designs. Simply put, a box is stronger than a "U". Clearance for 3" exhaust is provided while maintaining full strength and good ground clearance.

## Front Suspension

Fatman Fabrications Shoebox 49-51 Ford chassis come standard with Stage 3 custom IFS which features heavy duty .188 wall mild steel control arms, Delrin bushings and premium single adjustable coilovers.

The ride height is approximately 2"- 3" lower than stock height. Track width comes at 57" which is very close to the stock IFS. Shockwaves by Ridetech are optional and will fit the same crossmember and shock towers as built. A simple swap to those Shockwaves, modification to the sway bar mounts, and the air management system installed are all that is required. Power steering and a front sway bar are standard. Alignment is accomplished with a shim system allowing easy adjustment without disassembly all while maintaining proper axial alignment of the pivot bushings.

Air ride comes via Shockwave Stage 5 and are similar to how a coilover looks and mounts with the shock inside the air spring. A compressor system is needed with this option. If you want to run extra low, you can use 2" drop spindles. Keep in mind that the drop spindles will reduce ground clearance 2" as well.



**Stage 3**



**Stage 5**

Shocks are probably the biggest factor in ride comfort and handling. Shocks are the brains of the front suspension because it controls the velocity of the suspension.

As an example of this, NASCAR teams take dozens of shocks to the track but only a couple pair of springs. Stage 3 and Stage 5 have single adjustable shocks that are standard.

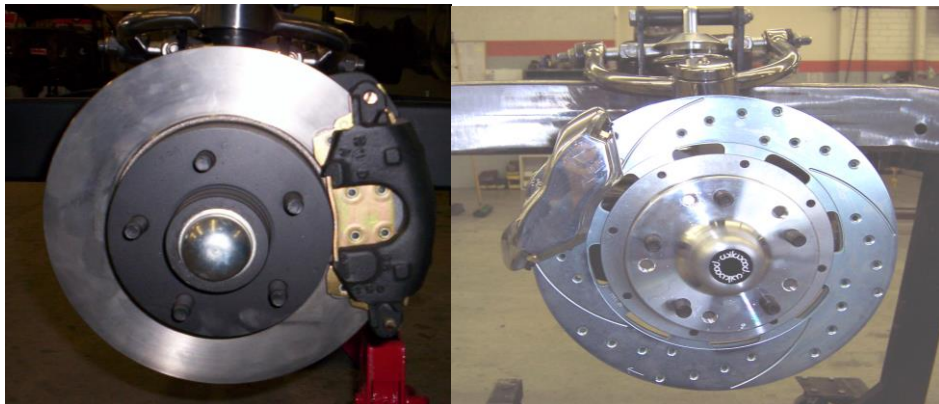
## Brakes

Something to keep in mind as we go over brakes is that sometimes people use bigger brakes to fill the space behind big billet wheels or just for dress up, without thinking about the safety aspect. 49-51 Fords generally weigh about the same as a stock Ford Mustang II, but keep in mind that bigger brakes are better brakes.

Fatman Fabrications chassis all come standard with OE style kits that use early GM big piston calipers and provide 65% more braking capacity than the stock Mustang II, and twice as much as other kits that use the small piston GM calipers. The 11" disc brakes use OEM parts that are easily serviceable using parts that are available at your local auto parts store in case you need to make an emergency repair.

5 lug 4 1/2" Ford pattern is standard. 5 lug 4 3/4" Chevy Pattern, w/ 12mm x 1.5mm metric studs are also available but use the above-mentioned small piston GM calipers. Give us a call to talk about the options that are available for bigger brakes if using the Chevy pattern.

We have several options from Master Power, CPP and Wilwood. CPP front kits use a Corvette style sealed hub which means no bearings to pack and 13" Corvette drilled/slotted rotors with matching calipers. Master Power brakes all include drilled/slotted hub style 1-piece rotors and have either late model OE calipers or their billet 4-piston calipers. Complete Wilwood big brake kits are available that use aluminum hubs, 4 or 6 piston aluminum calipers with 11" to 14" rotors. Drilled rotors and polished calipers are options on these kits.



**11" standard**

**Wilwood drilled and polished brakes**

Keep in mind that larger brake kits require larger wheel/tire combinations. Make sure to let us know what you plan on using. Always think safety first!

## Master Cylinder and Power Brake Options

A firewall mounted brake pedal/master cylinder assembly will be required when using our chassis. The new frame x-member installed for strength makes using a factory floor mounted pedal assembly impossible. Several quality brake parts manufacturers like Wilwood, Engineered Components Inc and Master Power can help with new pedal assemblies.

Fatman Fabrications use standard automotive steel brake lines for brake plumbing. They are D.O.T. approved, show quality looking and will last a lifetime. Since you must retain a firewall mounted master cylinder, we will “stub” the line at a point for you to finish the connections. We also use braided stainless flex hoses from the chassis to the calipers.

A simple scrub with a 3M pad and a coat of clear lacquer will preserve their fresh appearance without the safety issue related to stainless steel hard lines.

Metering valves are used with disc/drum applications. 2 psi residual pressure valves are used between the master cylinder and discs, and 10 psi residual pressure valves are used with drums.

### **Rear End and Suspension**

Fatman Fabrications uses a new Moser Engineering Ford 9”- 31 spline rear axle assembly which provides the foundation of the rear suspension. A fresh 3.70 Trac-Loc gearset is installed along with 4 ½” Ford bolt pattern and OE style rear disc brakes featuring a functional emergency brake system. Kits from Master Power, CPP and Wilwood are also available to match front brake assemblies and for better frame clearance.

Our own fully adjustable Pro-Link rear 4-bar, Z-bar, rear sway bar and premium single adjustable coilovers control the motion of this rugged and responsive design. The stock rear wheel wells are just over 9” wide. Rear wheels with the proper spacing, up to 7” wide, will clear the stock wheel tubs. The frame is narrow enough for more tire if the tubs are enlarged, but measure before you buy.

Please note that lowering the car and fitting modern wheel and tires will require disconnecting the rear coilovers for rear tire changes. Some models may require some floor pan modification to clear the 4-bar brackets, rear coilover mounts and driveshaft safety loop so please plan accordingly.

We often recommend that air ride be installed on the rear due to the flexibility afforded with the variable pressure. Coilovers do not accommodate changes in the load as well. The air ride can be set for a comfortable ride and proper ride height at the push of a button, regardless of the load. Don’t forget a compressor fill kit is required with an air ride suspension so there is an extra cost.

### **Sway Bars**

Rear sway bars come standard on all car chassis to help control body lean. We seldom use a front sway bar because of the nearly 50/50 weight distribution and good roll center on Mustang II based suspensions.

If using a big block engine, then a front sway bar is recommended. Also, if you want a car that has excellent cornering qualities, then choose this option. Please note that some ride quality suffers to make it handle better. Again, this all goes back to what kind of car you are building.

If using rear disc brakes with coilovers or air ride suspension with either disc or drum, a prostreet style rear sway is required.

## Engine/Transmissions

Mounts for the Ford 289/302/5.0 engines and the Ford AOD transmission mount come installed. The front steer power rack gets the steering out of the way for best oil pan and exhaust clearances. A dual sump Fox body 5.0 oil pan will be required.

Other engine/transmission combinations can be installed upon discussion with our Fatman Fabrications Chassis specialists. Flathead engines will **NOT** work; the design of the oil pan & pump will not allow them to fit in our chassis or stubs.

We can also assist with the selection of those and the required proper fitting components.

The Ford 51 cars came fitted with an automatic transmission and have a much larger transmission tunnel than the 49-50 models. Plan on removing and enlarging the spot-welded transmission cover on 49-50 cars.

The newer Ford modular engines require an adapter plate that we can supply. This engine may require the use of an aftermarket accessory or front runner drive system.

Fords latest Coyote engines have their own issues that will need to be dealt with. The oil pan is different than the early modular engines and requires the use of a Moroso oil pan part #20575 as well as recessing of the firewall on some applications. Many of the Coyote engines have no provision for a power steering pump, requiring an aftermarket pulley system or an add-on power steering pump kit. Make sure to plan on heavily modifying or replacing the transmission tunnel for the larger overdrive transmissions that come with the Coyote engines.

There simply is not enough space for mounting a brake and clutch pedal assembly on the frame without compromising safe ground clearance, so we require the use of an under-dash aftermarket assembly from one of the various manufacturers as noted before in this guide.

## Finish of Chassis

All chassis come assembled and coated with a rust inhibitor. As an option, Reflections Paint and Body Shop of Mint Hill, NC has a chassis priming service that includes the following steps, and we will take the chassis to & from the body shop for you:

1. Alcohol wash
2. Orbital sanding
3. Phosphoric acid wash
4. Etch priming
5. Epoxy priming

Epoxy primer is packaged in a variety of different colors. The black epoxy is the most popular of all the colors but will fade in the sun and eventually absorb water, so it should receive at least a coat of semi-gloss clear to seal it.

When catalyzed and sprayed, the black epoxy gives the same satin appearance as any new sheet metal parts right out of the factory. This primer can be left as is but will hold up best if scuff sanded and topcoat painted. This paint system is recommended by the paint manufacturer and is the best undercoat system available on the market today.

Remember, not everything is exact, and some minor modifications are likely every step of the car build, so plan for that and **test fit everything** before you paint anything.

**Notes**

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See our Builders Price Guide and Order Form for additional information and pricing.

When you are ready, give us a call to talk with our chassis shop specialist. They will assist you in verifying and dialing in the final version of your chassis, then they will send you a detailed written proposal for your approval.

Call us at (704) 545-0369 or email [tim@fatmanfab.com](mailto:tim@fatmanfab.com)

## 49-51 Ford Chassis Example



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