

# **35-40 Ford Chassis Builders Guide**



Thank you for your interest in a Fatman Fabrication frame for your 35-40 Ford car or 35-41 Ford pickup. Before you begin there are a few things we would like to discuss and point out.

First, **PLAN YOUR PROJECT!!!** Know how you want it to look when it's finished. This will be repeated many times because it can't be said enough. Do you intend for it to be hi-tech or old style? Billet wheels or painted steelies? Pro street? Pro touring? Ground scraping low? Who's going to drive the car and where? Is it going to be a low mileage show car or a freeway flyer for cross-country cruisin'? 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 don't absorb road shock. Remember, there is a tradeoff to everything, so save yourself time, money, and aggravation by planning your project.



**Low Tech**

**Hi-Tech**

Second, keep in mind **you are building a car**. You may be using an old steel body, but Henry was not very exact in the manufacturing process 60+ years ago and there are minor variations in all these old cars. There is some excellent quality 'glass bodies but each has its own variations and tradeoffs. Some are not even made to fit on a 35-40 frame. Not everything is exact, and some minor modifications are likely on **every** step of the car, so plan for that and **test fit everything** before you paint or powdercoat anything. But, after building close to a thousand of these frames we have them dialed in pretty good.

All of our frames for the 35-40 Fords are constructed of 2"x4"x.188" mandrel bent rectangle tubing. They are made to follow the original shape and form, and to fit with original body mounts. We include radiator mount brackets, bumper mount holes, drill and tap the topside body mount and gas tank holes. Body boxes are also included for car applications but omitted on the pickup chassis. We have found that 60-year-old and repro running boards and fenders seldom fit together well without 'tweaking'. We suggest you fit them, then drill and tap 5/16" fine thread bolt holes into our 3/16" thick frame rails in the proper location. Then 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 been accused of building our frames "too heavy duty", but we pride ourselves on a strong, rigid frame which you'll find is an extra big benefit if you're using a fiberglass body or parts. We also use a 1/4" wall front crossmember and .120 wall X-bracing and you'll understand that these are the strongest frames available!

## **Front suspension**

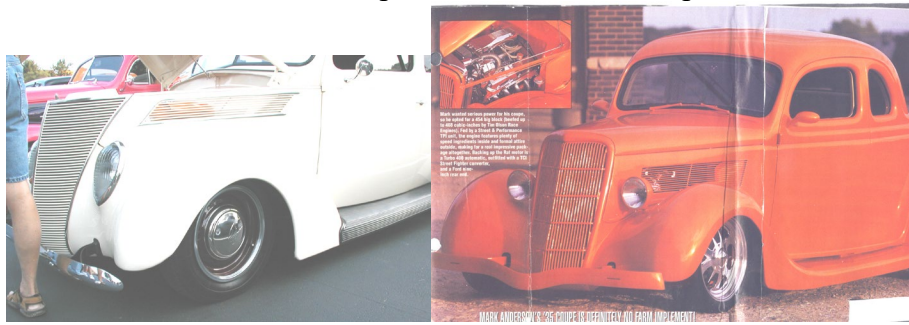
Fatman frames come standard with Stage 2 suspension, which uses coil springs and single adjustable shocks. The ride height is approximately 4" lower than stock height. Track width comes stock (56 ½ ") width which works well with normal street rod heights, as long as 6" front wheels with a centered, non-offset hub are used. If you want to run extra-low, use 7" or wider rims, or use traditional style offset wheels (such as original halibrands, 5-spoke Americans, or wire wheels), you'll find that tire to fender clearance is very tight. Billet wheels, and some after-market wheels are available with special backspacing to increase tire clearance, but of course your wheel selection will be limited.



**Standard Height**

Another solution is Fatman's exclusive narrowed (54 ½ ") option. By narrowing the mounting points for the control arms 1" per side, tire clearance is greatly improved so that extra-low ride height and full wheel selection can be accommodated. Narrowed frontends will require a frame notch and are only available on stage 3 coilovers or stage 5 shockwave.

If you want to run extra low, you can use drop spindles or our ultra-low option. The drop spindles will reduce ground clearance. Our ultra-low option mounts the crossmember 1 ½ " higher in the frame. Chevy engines normally fit fine, but Ford engines are even harder to fit and aren't recommended. The ultra-low option is usually used on 35-37's which sit higher off the frame than 39-40. Also, the narrowed option is recommended with the ultra-low to help with tire clearance as pictured below.

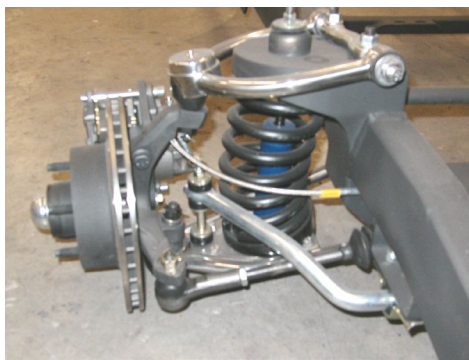


### **Ultra-Low Narrowed**

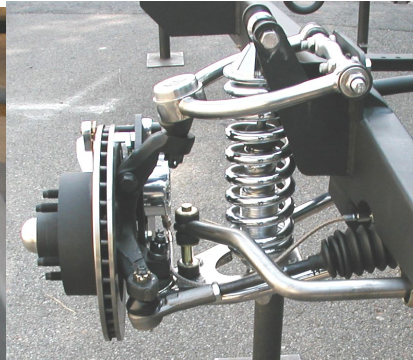
Stage 3 coilovers are our most popular option for the frontend because slight height adjustment, excellent shock, and good looks that match the electroless nickel plated steel tubular control arms that are standard on all frames. Single adjustable coilovers are standard on all Fatman stage 3 frames.

Air ride comes in either “cool” ride (Stage 4) or shockwave (Stage 5). “Cool” ride has the air spring in place of the coil spring and the shock mounted behind the control arms. Shockwaves are similar to how a coilover looks and mounts with the shock inside the air spring. A compressor system is needed with both options.

Manual rack and pinion steering is standard on “roller frames”, but power steering is available as an option and is generally recommended. The power steering option on narrowed front ends requires a special rack and is higher priced.



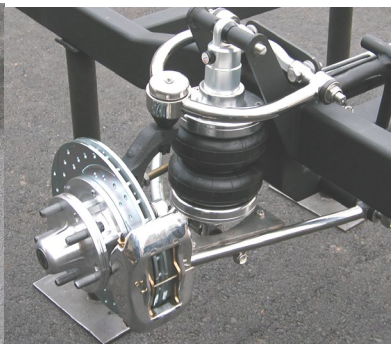
**Stage 2**



**Stage 3**



**Stage 4**



**Stage 5**

Shocks are probably the biggest factor in ride comfort and handling of a car. Shocks are the ‘brains’ of the front suspension because it controls the velocity of the suspension. NASCAR teams take dozens of shocks to the track but only a couple pair of springs. Single adjustable shocks are standard on Stage 2 and Stage 4 and allow you to fine tune your ride comfort and handling of your car. Stage 3 and Stage 5 have single adjustable shocks standard also.

## Brakes

Something to keep in mind as we discuss brakes is that some people use bigger brakes to “fill” their new big billet wheels or as a “dress up”, without thinking about the safety aspect. 35-40 Fords generally weigh about the same as a stock Mustang II car, but remember bigger brakes are better brakes. You have never heard anyone say “if I had less brakes I could have really nailed that car”.

That is why all Fatman frames 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. These 11” disc brakes use OEM parts that are easily serviceable units using parts that are available at your local auto parts store, should you need to make emergency repairs. 5 lug 4 ½ “(Ford pattern) is standard. 5 lug 4 ¾ “(Chevy Pattern, w/ 12mm x 1.5mm metric studs) is also available but use the above-mentioned small piston GM calipers. Talk to the Fatman rep. about the options that are available for bigger brakes if using Chevy pattern.

We have several options from Master Power, CPP and Wilwood. CPP front kits use a Corvette style sealed hub (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 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 through 14-inch rotors. Drilled rotors and polished calipers are options on these kits.



**OE 11” standard**

**Wilwood drilled and polished brakes**

Keep in mind that larger brake kits require larger wheel/tire combinations. Talk to the Fatman rep about what will fit. **Remember** bigger brake options are cheaper than a new fender or grill that you will have to buy because a new Honda that you rear ended has better brakes than you! Above all, think safety first.

## Master cylinder and power brake options

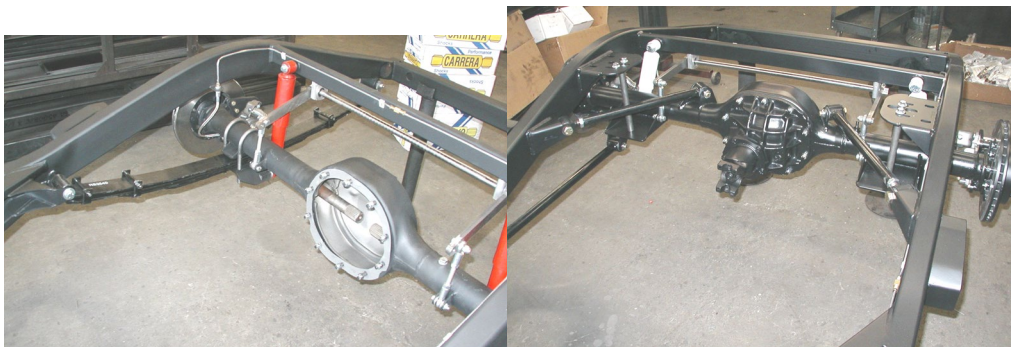
Manual brakes come standard and work well with common disc/drum combination brakes. They leave extra room for exhaust routing also. Power assist brakes are a great option and are recommended with disc/disc applications. To make it easier to service the master cylinder, remote filling kits are available as is a “cooler” looking

aluminum reservoir kit. Chromed and polished booster/master cylinder kits are also available. Note: our pedal assemblies are not designed to fit through the original hole in the floor. Most vehicles built back then had the driver's position more centered to make room for the large steering wheel required to steer these vehicles. The idea is to place the pedal where it's most comfortable for the newest driver. These pedals can then be bent to fit.

We use standard automotive steel brake lines for brake plumbing. These are D.O.T. approved, show quality looking and will last a lifetime. When you see the bent lines, you'll swear a machine did it. We also use braided stainless flex hoses from the frame to the calipers. Metering valves are used with disc/drum applications. 2 psi residual pressure valves are used between master cylinder and discs, and 10 psi residual pressure valves are used with drums.

### Rear Suspension

We use Chassis Engineering parallel leaf springs on the rear. They can be set up to accommodate either the standard or ultra-low ride heights as mentioned earlier. They provide excellent ride quality and adjust for changes in load (people, gas, and luggage) very well. They are excellent for stock width frame, but don't work well with frame rails that have been narrowed to accommodate larger tires. 4 link rear suspension (either parallel or tri-link) is used with coilovers or air ride. We often recommend the air ride on the rear due to the flexibility afforded with the variable pressure. Coilovers do not accommodate changes in load well as they have a given spring rate that may be comfortable in an empty car, not heavy enough in car loaded with extra stuff. 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 and there is less exhaust routing area. On some cars the floor drops down below the top of the frame and will get into the 4 link bars, so sheet metal may have to be modified.



**Leaf Springs**

**Tri Link w/ air springs (shown w/ setup bars)**

### Sway bars

Rear sway bars come standard on all car frames 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 one is recommended. Also, if you want a “G” machine that has excellent cornering qualities, then choose this option. Plus, if the “mid life crisis” guy with the new Corvette thinks that your “old” car is no match for his, you will have something for him. Beware; 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.

### **Rearends**

Fatman standard ‘roller’ frames include a new 9” Ford rear housing and 31 spline axles now supplied by Moser Engineering in Portland, IN.

You can get brand new gear sets also supplied by Moser Engineering. Available in Trac Loc, Tru-trac or Wave-trac configuration. All new gearsets feature their lightweight nodular case (good up to 600HP), aluminum bearing support and new non-billet 1350 series yoke.

You can get disc and drum brakes for the 9” rear-ends. We generally use kits that use O.E.M. parts. Kits from MP, CPP and Wilwood are also available to match front brake assemblies or also for better frame clearance issues.

8” wide wheels, regardless of the diameter, will fit under the rear fenders with the proper backspacing. 10” or wider wheels will require the rear frame rails to be narrowed. We will have a 9” rearend made per your exact measurements of your mounted tire and wheel combination (No, we’re not going to go by what the tire manufacturer says the inflated tire size is. We have yet to see the right measurement in those pamphlets).

### **Engine/Transmissions**

First let me talk to you guys that want to run the Coyote and Modular engines. They will barely fit between your fenders (about ¼ inch clearance on either side) because the motor is so wide. You will need the Moroso road race/conversion oil pan #20575 to help with crossmember clearance. The oil filter on some engines ends up where the upper control arm is, you may have to cut up the x-member for exhaust clearance, and the brake pedal gets into the back of the motor just to name a few problems. Steering hookup will be complicated to say the least. It’s like putting 5 lbs. of stuff into a 2 lb bag. But if you just have to have it, be prepared for extra effort and cost.

The 35-39 Standard radiators lean back, creating fan clearance problems. The vertical 39 Deluxe-40 radiators leave more room and a small block Chevy with short water pump and small distributor doesn’t require a recessed firewall. Any other motor combination or anything in a slant back radiator car will require a recessed firewall. Chevrolet small blocks fit the best and are easily customized. But to some they are like bellybuttons, everybody has one. Nevertheless, they fit better than anything else. LS series engines require an adapter plate that we can supply. They also will require the use of an aftermarket accessory drive system. Steering hookup for an LS series is difficult at best, so choose headers carefully. The chart below will provide some help in determining a workable combination.

Year	Engine	Water Pump	Distributor	Firewall Recess	Fan/Radiator
39-40	SB Chevy	short	small	0	behind
“	SB Chevy	short	HEI	notch 1 ½ “	“
“	SB Chevy	long	HEI	3”	“
“	GM LS			3”	“
35-38	SB Chevy	short	small	”	electric/ front
“	SB Chevy	short	HEI	”	“
“	SB Chevy	long	HEI	5”	“
“	GM LS			5”	“
39-40	BB Chevy	short	either	“	“
37-39	BB Chevy	short	“	“	“
Any	SB Ford	needs dual sump oil pan		“	“
Any	BB Ford	needs “Fox” conversion rear sump oil pan		“	“
Any	Ford Mod/Coyote			5”	“

We can mount most any transmission whether Ford or Chevy. We will need the measurement from front of tranny to the transmount on the Chevy 4L60E as they do vary. With manual shift trannys we will need the measurement from front of bellhousing to transmount, the width at the widest point, and if you will use hydraulic or mechanical clutch linkage. The option price on clutch pedal setups does vary according to what setup you use, any frame rework, and if you want us to mount a clutch master cylinder.

### Finish of frames

All frames come assembled and coated with a rust inhibitor. As an option *Reflections Paint and Body Shop, Inc.* (located in the same complex) has a frame priming service that **includes** the following steps:

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 on **every** step of the car, so plan for that and **test fit everything** before you paint anything.

### **Other options**

The power steering hose kit is a must have if going with power steering. This kit supplies 4 different fittings to connect to nearly any power steering pump with integral reservoir. The braided stainless hose can be cut to length for a custom fit.

The 3 U-joint steering hookup kit supplies Borgeson U-joints, ¾” steel rod, and heim joint. Use ¾” wood dowels or plastic pipe in place of the steel rod to mock up with.

### **Notes**

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## **35-40 Ford Builders Special Frame**

### **Standard Items include:**

- 2”x4”x.188” mandrel bent tubing frame rails, 1”x2”x.120” mandrel bent xmember
- Radiator and bumper mount holes, topside body mount holes drilled and tapped, gas tank mounting holes, and body boxes.
- Mustang II based front crossmember made of 3”x4”x .312” tubing and upper mounts for stage 2 to stage 5
- Engine and transmission mounts for small block Ford or Chevy

Add your own bolt on front suspension parts, rear suspension, and brake pedal assembly

## **Builder special \$ 8,395**

### **Builder special options:**

<input type="checkbox"/> front bolt on suspension parts	from \$2,300
<input type="checkbox"/> manual brake pedal and bracket installed	add \$750
<input type="checkbox"/> power brake pedal and bracket installed	add \$1,050
<input type="checkbox"/> mounts for leaf springs	add \$595
<input type="checkbox"/> rear leaf spring kit	add \$1,230
<input type="checkbox"/> rear sway bar	add \$695

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## **35-40 Ford Roller Chassis**

### **Standard Items include Builder Special items plus:**

- Fatman stage 2 front suspension including nickel plated steel tubular control arms, coil springs, single adjustable shocks, mustang II-based spindles with 11" disc brake assembly, and manual rack and pinion steering
- Single pedal brake assembly with manual master cylinder
- Chassis Engineering parallel leaf spring rear suspension with rear sway bar
- New 9" Ford rear end housing with 31 spline axles
- Assembled and coated with a rust inhibitor

## **Roller price \$13,499**

### **Options**

#### **Front upgrades:**

<input type="checkbox"/> coilsprings (Stg 2)	no charge	
<input type="checkbox"/> coilovers (Stg 3)	add \$800	
<input type="checkbox"/> "Cool" air ride (Stg 4)	add \$995	
<input type="checkbox"/> shockwave (Stg 5)	add \$1,500	
<input type="checkbox"/> ultra-low crossmember	add \$375	lowers front without drop spindles; narr front recommended
<input type="checkbox"/> power steering	add \$200	
<input type="checkbox"/> 2" narrowed, manual	add \$375	Stg 3 only, add \$1,075 for Stg 5
<input type="checkbox"/> 2" narr p/s	add \$675	Stg 3 only, add \$1,075 for Stg 5
<input type="checkbox"/> 2" drop spindles	N/C option	
<input type="checkbox"/> 1 1/2" raised spindles	add \$295	
<input type="checkbox"/> front sway bar	add \$425	recommended for big blocks, better handling
<input type="checkbox"/> front sway bar for Airride	add \$540	
<input type="checkbox"/> Chevy bolt patt.	N/C	82-92 Camaro rotor and caliper
<input type="checkbox"/> Zero offset brake kit	add \$525	hub style, large caliper, avail Ford or GM pattern 11" rotor
<input type="checkbox"/> Zero offset-13 kit	add \$625	" " " " " " " " " " 13" rotor
<input type="checkbox"/> CPP Vette brake kit	add \$800	Corvette style sealed brgs w 13" D/S rotors, Vette calipers

- \_\_ MP Legend ser. 11" add \$649 11" D/S rotor- OE big GM cal – Hawk pads  
 \_\_ MP Rally ser. 11" add \$1,000 11" D/S rotors-4 piston cal- 15" wheels OK

### **Front upgrades: (continued)**

- \_\_ MP Pro Driver 13" add \$1,836 13"D/S rotors- 4 piston cal- 17" or larger wheels  
 \_\_ Wilwood caliper add \$495 black or red powdercoat, includes pins  
 \_\_ Wilwood 11" kit add \$925 4 piston, alum. hub, fits 15" or larger wheels  
 \_\_ Wilwood 12" kit add \$980 4 piston, alum. hub, fits 17" or larger wheels, some 16's  
 \_\_ Wilwood 12" kit add \$1,140 6 piston, alum. hub, fits 17" or larger wheels, some 16's  
 \_\_ Wilwood 13" kit add \$1,455 6 piston, alum. hub, fits " " " "  
 \_\_ Wilwood 14" kit add \$2,120 6 piston, alum. hub, fits 18" " " "  
 \_\_ above Wilwood kits drilled rotors add \$225  
 \_\_ above Wilwood kits red calipers N/C  
 \_\_ above Wilwood kits polished calipers add \$255 4 piston, 6 piston N/A

### **Engine upgrades:**

- \_\_ SB Ford or Chevy no charge  
 \_\_ any other motor add \$500 including Ford Coyote engine  
 \_\_ Chevy LS1/Ford Mod add \$125 motor mount adaptors

### **Power brake upgrades:**

- \_\_ power booster add \$325  
 \_\_ show p/b add \$650 stainless steel booster, chrome master cylinder  
 \_\_ remote fill add \$355  
 \_\_ Alum remote fill add \$550  
 \_\_ brake lines add \$895 D.O.T. approved steel hard lines and braided steel hoses  
 \_\_ clutch pedal add \$850 includes Wilwood clutch m/c for hydraulic hookup

### **Rear Suspension upgrades:**

- \_\_ ultra low leaf add \$550  
 \_\_ 4 bar w/ coilovers add \$2,600  
 \_\_ 4 bar w/ "cool" air ride add \$2,700  
 \_\_ 4 bar w/ shockwaves add \$2,800  
 \_\_ Stainless steel 4 link bars add \$980 add on to above 4 link systems  
 \_\_ frame notches add \$300 required for some ultra low and rear disc brake clearance  
 \_\_ pro street rails add \$2,200  
 \_\_ pro street sway bar add \$550 required with some 4 link setups and/or rear disc brakes

### **Rearend upgrades:**

- \_\_ new Trac Loc 9" gearset add \$1,995  
 \_\_ Tru-trac upgrade from Trac-loc add \$250 to Trac-loc option  
 \_\_ Wave-trac upgrade from Trac-loc add \$340 to Trac-loc option  
 \_\_ new HD Nodular case -35 spline Tru-trac gearset add \$850 to trac-loc gearset  
 \_\_ new drum brakes for 9" add \$625  
 \_\_ OE style rear disc add \$850 11" Trans-Am rotors, Cadillac calipers w/ parking brake  
 \_\_ CPP 11" rear disc add \$895 11" T/A rotor- D/S, GM caliper w parking brake  
 \_\_ CPP 12" rear disc add \$1050 12" rotor- D/S, GM caliper w parking brake  
 \_\_ MP Legend ser. 11" add \$950 11" rotor- D/S, OE caliper w parking brake  
 \_\_ MP Pro Driver 12" add \$1,570 12" D/S rotor, 4-piston caliper, internal shoe p.b

### **Rearend upgrades: (cont.)**

<input type="checkbox"/> Wilwood 11" rear disc	add \$1,170	11" rotors, 4 piston-will fit most 15" disc brake wheels
<input type="checkbox"/> Wilwood 12" rear disc	add \$1,175	12" rotors, 4 piston with internal shoe parking brake
<input type="checkbox"/> Wilwood 13" rear disc	add \$2,075	13" rotors, 4 piston with internal shoe parking brake
<input type="checkbox"/> above Wilwood kit drilled rotors	add \$225	
<input type="checkbox"/> above Wilwood kit red calipers	N/C	
<input type="checkbox"/> above Wilwood kit polished calipers	add \$255 on 11" & 12" and \$425 on 13" brakes	

**Other options:**

<input type="checkbox"/> epoxy primer	add \$1,950	
<input type="checkbox"/> Borgeson 3 joint steering hookup	add \$395	
<input type="checkbox"/> Power steering hose kit	add \$155	
<input type="checkbox"/> 2 way Air ride comp. kit w tank	add \$995	
<input type="checkbox"/> 4 way Air ride analog system-3 gal.	add \$1,375	manual operation, dial gauges
<input type="checkbox"/> 4 way Air ride digital system- 3 gal.	add \$2,425	Ridepro E5
<input type="checkbox"/> 4 way Airpod comp kit-3 gal. w/ cover	add \$2,775	Ridepro E5
<input type="checkbox"/> Ride height sensor kit add on to E5 systems	add \$525	

Custom options available, if you have an idea let's discuss it.

Total options \$ \_\_\_\_\_  
Roller frame +\$13,499

Total price \$ \_\_\_\_\_

1/2 deposit required with order. Personal check ok for deposit. Balance due prior to shipment in cashier's check. Shipping cost will be added to the final balance once a shipping quote is received from one of our freight carriers. No credit cards on frame orders. Shipped frames require a \$375.00 pallet fee. Shipped frames may require applicable sales tax charges for their respective states. No refunds on completed frames. Frames picked up are subject to North Carolina sales tax currently 7.25%

Once our sales team has worked with you on a basic plan, we will connect you with our frame shop specialist. He will assist you in verifying and dialing in the final version, then we'll send a written proposal for your approval. A signed copy must be returned to us before the frame is ready to be built and will ensure that both parties clearly understand the chassis specifications, the way you want it!

(704)545-0369 phone  
(704)573-0401 fax

