Installation Instructions

6" Performance Suspension System

2000 - 2004 GM 2WD C1500 SUV's / Avalanche
2004 CHEVY 2WD C1500 TRUCK WITH TORSION FRONT

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6" 2000-2004 GM 2WD C1500 SUV's / Avalanche
2004 Chevy 2wd C1500 Truck With Torsion Bar Front Suspension
FTS21017 / FTS21021 / FTS21028

PARTS LIST

	FTS21017	Box 1 All
Qua	Part #	Description
1	FTS10013D	Spindle –Driver side
1	FTS10013P	Spindle - Passenger
2	FT20040	Sway Bar links
1	FT20044	Hardware Kit
1	FT1044	Bushing Kit
1	FT90084	Bushing Kit
1	FT90085	Bushing Kit
2	FTS60235	Bump Stop

	FTS21021	Box 2 (SUV's)
Qua	**Part #**	**Description**
1	FT20021	Front Crossmember
1	FT20032	Rear Crossmember
2	FT20054	Impact Strut Rear Mount
2	FT20023	Impact Strut
2	FT20052	Torsion Bar Mount
1	FT20055	Hardware Kit

	FTS21028	Box 2 (Trucks)
Qua	**Part #**	**Description**
1	FT20021BK	Front Crossmember
1	FT20032BK	Rear Crossmember
2	FT20054BK	Impact Mount
2	FT20023BK	Impact Tube
2	FT20144BK	Torsion Bar Bracket
2	FT20025BK	Rear Bump Stop Drop
1	FT20074	Carrier Bearing Drop
2	FTBK4	4" Block
4	FT1500U-3	U-Bolts
1	FT916H	U-Bolt Hardware
2	FT20024	Add-A-Leaf
2	CB-06X5	Center Pin
2	37240003952	Center Pin Nut
1	FT20039	Hardware Kit
2	37162001081	3/8"-16 X 2" Hex Bolt
2	37160003052	3/8"-16 Nyloc Nut
4	37000005052	3/8" SAE Flat Washer

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HARDWARE LIST:

	FT20044 (all)
Qua	**Description**
2	5/8-11x 5-1/2" Bolt
2	5/8-11x 4-1/2" Bolt
4	5/8-11 Steel Lock Nut
8	5/8" SAE Flat Washer
2	3/8"-16 Nyloc Lock Nut
2	1/4-20 x 3/4" Bolt
2	1/4" SAE Flat Washer
2	1/4" Split Lock Washer
6	7" Tyraps
4	1/2-13 X 3 Button Head

	FT20039 (Trucks only)
Qua	**Description**
4	7/16-14 x 3-1/2" Bolt
2	1/2-13 x 1-1/4" Bolt
4	7/16-14 x 1-1/4" Bolt
8	7/16-14 Nyloc Lock Nut
2	1/2-13 Steel Lock Nut
16	7/16" SAE Flat Washer
4	1/2" SAE Flat Washer
8	7/16-14 x 1-1/4" Bolt
8	7/16-14 Steel Lock Nut
16	7/16" SAE Flat Washer
2	10mm-1.5 x 25mm
2	10MM Split Lock Washer

	FT20055 (SUV Only)
Qua	**Description**
4	7/16-14 x 3-1/2" Bolt
4	1/2-13 x 1-1/4" Bolt
4	7/16-14 x 1-1/4" Bolt
8	7/16-14 Nyloc Lock Nut
4	1/2-13 Steel Lock Nut
20	7/16" SAE Flat Washer
8	1/2" SAE Flat Washer
2	9/16-12 x 3" Bolt
2	9/16-12 Steel Lock Nut
4	9/16" SAE Flat Washer
4	5/16 -1-1/4" Bolt
4	5/16 -18 Nyloc Lock Nut
8	5/16" SAE Washer

TOOL LIST: (NOT INCLUDED)

- **FLOOR JACK & JACK STANDS**
- **ASSORTED METRIC AND S.A.E SOCKETS, & WRENCHES**
- **LARGE C CLAMP OR C CLAMP VISE GRIPS**
- **TORSION BAR REMOVAL TOOL**
- **TORQUE WRENCH**

NOTE- IF INSTALLING THIS KIT ON AN SUV, REAR FABTECH KIT FTS1599-2 or FTS1599-4 ARE REQUIRED.

SUSPENSION SYSTEM WILL NOT WORK ON VEHICLES EQUIPPED WITH FACTORY AUTO RIDE SUSPENSION

DO NOT ALTER THE FINISH OF THESE COMPONENTS, EXAMPLE- CHROMING, ZINC PLATING OR PAINTING. CHANGING THE FINISH CAN CAUSE STRUCTURAL FATIGUE OF COMPONENTS.

VEHICLES THAT WILL RECEIVE OVERSIZED TIRES SHOULD CHECK BALL JOINTS, TIE RODS ENDS AND IDLER ARM EVERY 2500-5000 MILES FOR WEAR AND REPLACE AS NEEDED

THIS KIT MAY NOT WORK ON VEHICLES WITH 1 PIECE DRIVESHAFT.

SUSPENSION SYSTEM MUST BE INSTALLED WITH FABTECH SHOCK ASBORBERS OR FABTECH AUTO RIDE BRACKET KIT# FTS51005BK IF YOUR SUV IS EQUIPPED WITH FRONT AUTO RIDE.

CHECK ALL PARTS INCLUDED IN THIS KIT TO THE PARTS LIST ABOVE BEFORE BEGINNING INSTALLATION OF THE KIT. IF ANY PIECES ARE MISSING, CONTACT FABTECH AT 909-597-7800

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION! IF THESE INSTRUCTIONS ARE NOT PROPERLY FOLLOWED, SEVERE FRAME, DRIVELINE AND / OR SUSPENSION DAMAGE MAY RESULT.

NOTE- PRIOR TO THE INSTALLATION OF THIS SUSPENSION SYSTEM A FRONT END ALIGNMENT MUST BE PERFORMED AND RECORDED. DO NOT INSTALL THIS SYSTEM IF THE VEHICLE ALIGNMENT IS NOT WITHIN FACTORY SPECIFICATIONS. CHECK FOR FRAME AND SUSPENSION DAMAGE PRIOR TO INSTALLATION. THIS SUSPENSION SYSTEM DOES NOT REQUIRE WELDING FOR INSTALLATION. DO NOT WELD ANY OF THESE COMPONENTS.

THE INSTALLATION OF THIS SUSPENSION SYSTEM SHOULD BE PERFORMED BY TWO PROFESSIONAL MECHANICS.

FRONT SUSPENSION INSTRUCTIONS:

1. Disconnect the negative terminal on the battery. With the vehicle on level ground set the emergency brake and block the rear tires. Jack up the front end of the truck and support the frame rails with jack stands. **NEVER WORK UNDER AN UNSUPPORTED VEHICLE!** Remove the front tires.

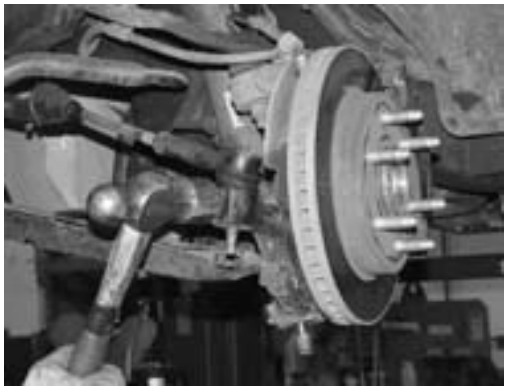
2. Locate the torsion bar adjusting cams and threaded bolts. Measure exposed threads of torsion bar adjusting bolts and record for reinstallation. Mark torsion bars indicating driver and passenger. Using a torsion bar removal tool unload the torsion bars and remove the crossmember and bars. Retain the hardware for reinstallation. **NOTE- Do not attempt to unload or remove torsion bars without the proper torsion bar tool. Torsion Bars are under extreme spring load.**

3. Working from both sides of the truck, remove the sway bar link ends from the sway bar and the lower control arms and discard end link and hardware.

4. Remove the stock shocks and discard. **Note- If your SUV is equipped with Auto Ride Shocks, order Fabtech FTS51005BK Auto Ride Shock Kit to retain the factory shocks, this is for SUV's only, this kit will not work on trucks equipped with Auto Ride.**

5. Remove the stock lower rubber bump stops from the frame and discard.

6. Disconnect the tie rod ends from the steering knuckle by striking the knuckle to dislodge the tie rod end. Use care not to damage the tie rod end when removing. SEE PHOTO IN NEXT COLUNM.



7. Unplug the ABS brake connection from the frame. Remove the brake hose bracket from the back of the steering knuckle. Remove the caliper from the rotor and place above the upper control arm during this portion of the installation.

8. Remove the wheel stud clips and discard. Remove the brake rotor from the steering knuckle. Remove the hub bearing assembly with ABS sensor and retain parts and hardware for reinstallation. **Do not disconnect the ABS sensor from the bearing assembly**.

9. Remove the upper and lower ball joint nuts. Disconnect the upper and lower ball joints from the steering knuckle by striking the knuckle with a large hammer next to each ball joint on the knuckle to dislodge the ball joints. Use care not to hit the ball joints when removing. Retain nuts and discard knuckle. SEE PHOTO ON NEXT PAGE.

10. Remove the lower control arms from the frame and retain the hardware for reinstallation.

11. Remove the front factory splash shield that is connected to the factory front crossmember and bumper and discard. Retain the hardware for front crossmember installation.

12. Remove the factory rear crossmember and discard.

14. Locate and install the rear crossmember into the factory lower control arm pockets using the stock hardware and leave loose at this time. Locate and install the Fabtech urethane bump stops to the angled portion of the crossmember using the 3/8" nuts. Torque to 15lbs. SEE BELOW PHOTO

15. Locate and install the front crossmember into the factory lower control arm pockets using the stock hardware, leave loose. Locate the access hole on the bottom of the crossmember to thread the factory bolts into the factory bolt holes, these are the holes and hardware that attached the factory splash guard previously removed. Leave loose. SEE PHOTO IN NEXT COLUNM.

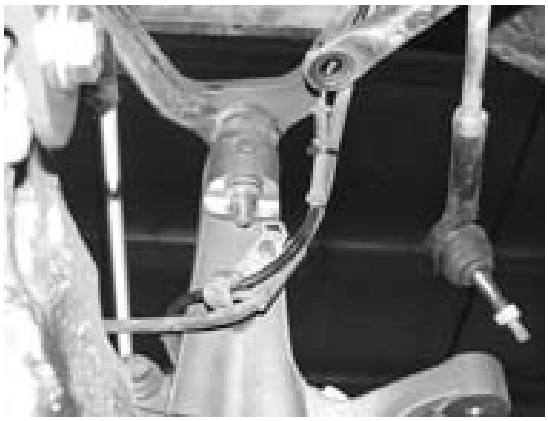
16. Install the lower control arms into the new crossmembers using the 5/8" x 5-1/2" and 5/8" x 4-1/2" bolts nuts and washers.

17. Torque the front and rear crossmember frame pocket bolts to 125lbs and the control arm bolts to125lbs.

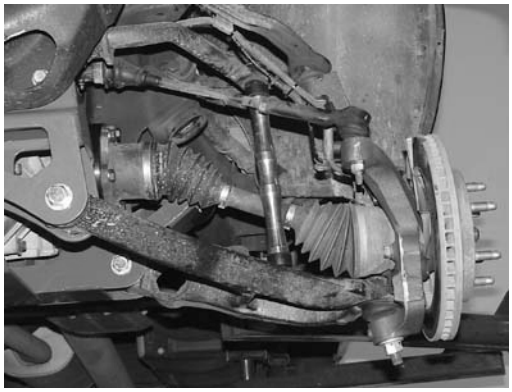
18.Locate the steering knuckle FT10013D for the driver side. Attach the lower control arm ball joint to the knuckle using the stock hardware and torque to 70 lbs. Attach the upper control arm ball joint to the new knuckle using the factory hardware and torque to 35LBS.

19. Reinstall the hub bearing assembly using the stock hardware and torque flange bolts to 125lbs. Reinstall brake rotor and caliper. Torque caliper bolts to 30lbs.

20. Re-route the brake hose to the steering knuckle using the factory steel guide clamp to the back of the steering knuckle and attach with ¼" x 3/4" bolt and washer. Torque to 10LBS. Check to make sure that the brake hose is routed as to allow full turning radius to the steering without tire or suspension component contact. Route the ABS line from the bearing assembly to the front leg of the upper control arm next to the brake hose. Using provided plastic tyraps secure line and hose to the upper control arm away from the tire and wheel. SEE PHOTO BELOW



22. Locate and install the Fabtech sway bar link ends with the provided urethane bushings and washers using ½" x 3" Button head bolts. Torque to 10lbs. SEE PHOTO ON NEXT PAGE.



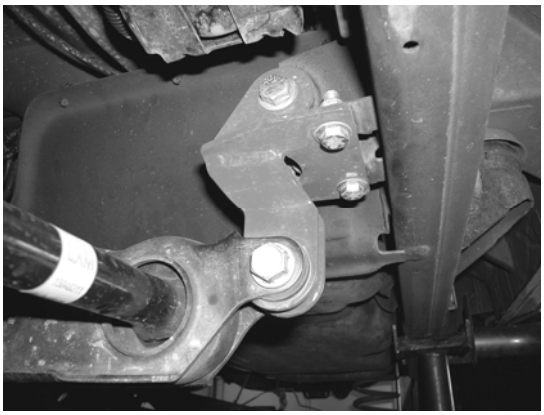
Picture shown is 4WD, Install sway bar link same for 2WD

23. Locate and install front shocks using the stock hardware and torque the upper mount to 15lbs and lower to 55lbs. If you are using FTS51005BK Auto Ride Shock kit follow the instructions supplied in that kit for install.

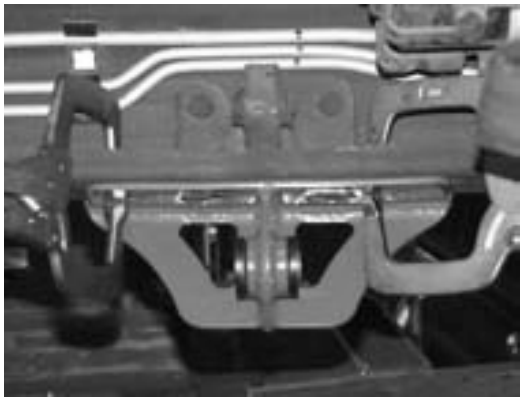
24. Locate and install the bushings into the Impact Strut tubes. Attach the Impact Struts into the tabs on the backside of the control arm crossmember using the supplied 7/16” x 3-1/2” bolts, nuts and washers. Torque to 45lbs.

25. Locate the rear impact strut mount and attach it to the impact tube using the supplied 7/16” x 3-1/2” bolts, nuts, and washers. Place the Impact Strut mounts to the bottom of the transmission crossmember aligning the three factory holes to the mounts. Using the ½” x 1-1/4” bolts, nuts and washers attach the mount to the crossmember and torque the 7/16” bolts to and the ½” bolts to 45lbs. SEE PHOTO BELOW.

26. Locate the torsion bar drop bracket and install the bushings and sleeves. Placing the Fabtech mount with the bushing eye directly below the factory torsion bar bushing eye, clamp to the mount to the bottom and side of the frame. Locate the center of each hole, center punch the frame and drill out frame to 7/16” diameter. Attach torsion bar mounts using 7/16” x 1-1/4” bolts, nuts and washers. Torque to 65lbs. Repeat same procedure for the opposite side. SEE PHOTOS IN NEXT COLUMN



S.U.V. Bracket Shown Above



Truck Bracket Shown Above

27. Re install the driver and passenger side torsion bars with the factory torsion bar crossmember installed into the new Torsion Bar mounts using the factory hardware and torque to 70lbs.

28. Set Torsion Bar adjusters to the recorded thread measurement from the disassembly.

39. Install front tires and wheels. Torque lug nuts to wheel manufacturers specifications.

Rear Suspension Install

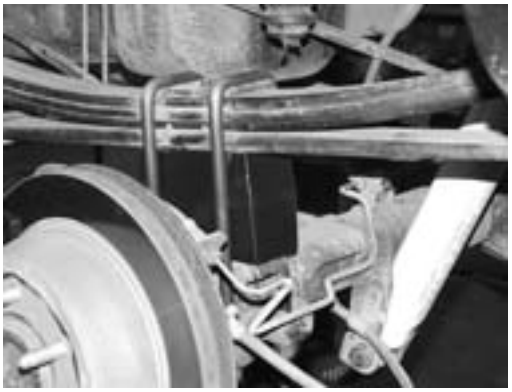
30. Proceed to Fabtech box kit # FTS1599-2 or FTS1599-4 for rear suspensions on S.U.V. models and continue the install below on trucks.

31. Jack up the rear end of the vehicle and support the frame rails with jack stands. Supporting the rear differential remove and discard the rear shocks, u-bolts and blocks. Lower axle down slowly. Use care not to over extend the brake hose.

32. Clamp the leaf spring in the middle of the spring and remove the center bolt. SEE PHOTO ON NEXT PAGE

33. Separate the springs and install the provided add a leaf with the new center bolt in a pyramid pattern smallest on the bottom graduating to the longest on top. The factory flat overload leaf should remain on the bottom of the pack. Clamp the spring and tighten the center bolt as not to leave a gap between the springs. Cut the thread of the bolt smooth with the nut. The nut should be on the top of the leaf spring pack.

34. Locate and install the rear lift blocks with the provided short center pin on the bottom of the block, to the axle. The short end of the block should face to the front of the vehicle. Using the provided U bolts, nuts and washers align axle, lift blocks, and springs and torque to U Bolts to 90lbs. SEE PHOTO IN NEXT COLUNM.



35. Remove rear rubber bump stops and install extension bracket using 10mm x 25mm bolt and lock washer, Torque to 20lbs. Reinstall factory rubber bumps stop to the bottom of the new bracket.

36. Install new Fabtech shocks with the factory hardware and torque upper bolts to 65lbs and lower bolts to 65lbs

Recheck all bolts for proper torque. Recheck brake hoses and lines for proper clearances.

37. Install tires and wheels and torque lug nuts to wheel manufacturers specifications. Turn front tires left to right and check for appropriate tire clearance. Note- Some tires may require trimming of the front plastic bumper valance.

38. Check front end alignment and set to factory specifications. Re-adjust headlights.

RETORQUE ALL NUTS, BOLTS AND LUGS AFTER 50 MILES AND PERIODICALLY THEREAFTER.
VEHICLES THAT WILL RECEIVE OVERSIZED TIRES SHOULD CHECK BALL JOINTS, TIE RODS ENDS AND IDLER ARM EVERY 2500-5000 MILES FOR WEAR AND REPLACE AS NEEDED

For technical assistance call: 909-597-7800

Product Warranty and Warnings-

Fabtech provides a Limited Lifetime Warranty to the original retail purchaser who owns the vehicle, on which the product was originally installed, for defects in workmanship and materials.

The Limited Lifetime Warranty excludes the following Fabtech items; bushings, bump stops, ball joints, tie rod ends, limiting straps, cross shafts, heim joints. These parts are subject to wear and are not considered defective when worn. They are warranted for 60 days from the date of purchase for defects in workmanship.

Take apart shocks are considered a serviceable shock with a one year warranty on leakage only. Service seal kits are available separately for future maintenance. All other shocks are covered under our Limited Lifetime Warranty.

Fabtech does not warrant any product for finish, alterations, modifications and/or installation contrary to Fabtech's instructions. Alterations to the finish of the parts including but not limited to painting, powdercoating, plating and/or welding will void all warranties. Some finish damage may occur to parts during shipping which is considered normal and is not covered under warranty.

Fabtech products are not designed nor intended to be installed on vehicles used in race applications or for racing purposes or for similar activities. (A "RACE" is defined as any contest between two or more vehicles, or any contest of one or more vehicle against the clock, whether or not such contest is for a prize). This warranty does not include coverage for police or taxi vehicles, race vehicles, or vehicles used for government or commercial purposes. Also excluded from this warranty are sales outside of the United States of America.

Installation of most suspension products will raise the center of gravity of the vehicle and will cause the vehicle to handle differently than stock. It may increase the vehicle's susceptibility to a rollover, on road and off road, at all speeds. Extreme care should be taken to operate the vehicle safely at all times to prevent rollover or loss of control resulting in serious injury or death. Fabtech front end Desert Guards may impair the deployment or operation of vehicles equipped with supplemental restraining systems/air bag systems and should not be installed if the vehicle is equipped as so.

Fabtech makes every effort to ensure suspension product compatibility with all vehicles listed in the catalog, but due to unknown auto manufacturers production changes and/or inconstancies by the auto manufacturer, Fabtech cannot be responsible for 100% compatibility, including the fitment of tire and wheel sizes listed. The Tire and Wheel sizes listed in Fabtech's catalog are only a guideline for street driving with noted fender trimming. Fabtech is not responsible for damages to the vehicle's body or tires.

Fabtech's obligation under this warranty is limited to the repair or replacement, at Fabtech option, of the defective product only. All costs of removal, installation or re-installation, freight charges, incidental or consequential damages are expressly excluded from this warranty. Fabtech is not responsible for damages and/or warranty of other vehicle parts related or non related to the installed Fabtech product. This warranty is expressly in lieu of all other warranties expressed or implied. This warranty shall not apply to any product that has been subject to accident, negligence, alteration, abuse or misuse as determined by Fabtech.

Fabtech suspension components must be installed as a complete system including shocks as shown in our current catalog. All warranties will become void if Fabtech parts are combined and/or substituted with other aftermarket suspension products. Combination and/or substitution of other aftermarket suspension parts may cause premature wear and/or product failure resulting in an accident causing injury or death. Fabtech does not warrant products not manufactured by Fabtech.

Installation of Fabtech product may void the vehicles factory warranty; it is the consumer's responsibility to check with their local vehicle's dealer for warranty disposition before the installation of the product.

It is the responsibility of the distributor and/or the retailer to review all warranties and warnings of Fabtech products with the consumer prior to purchase.

Fabtech reserves the right to supercede, discontinue, change the design, finish, part number and, or application of parts when deemed necessary without written notice. Fabtech is not responsible for misprints or typographical errors within the catalog or price sheet.