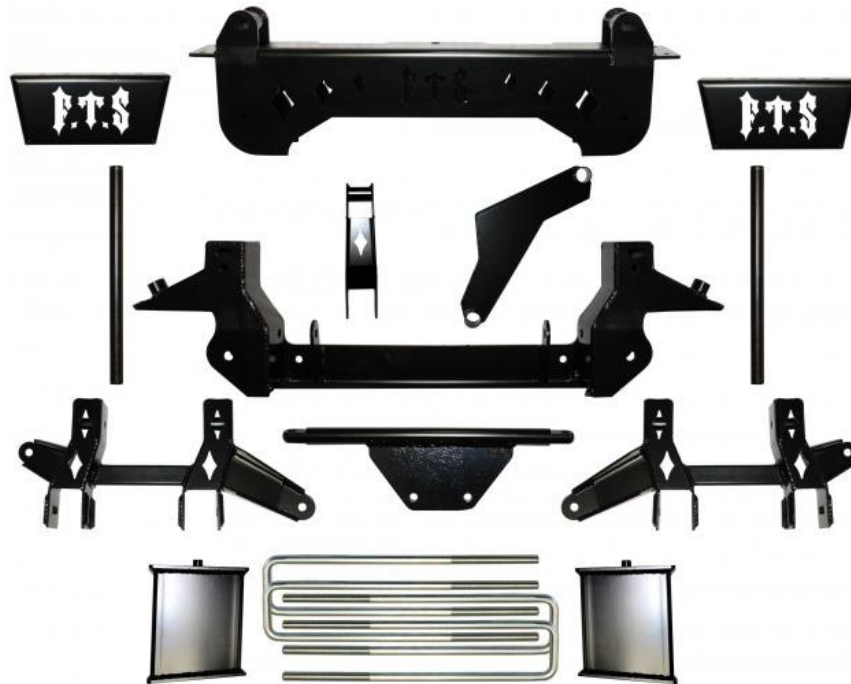


# 83101



## 1988-1998 CHEVY /GMC 1500 4WD 6.5" BASIC KIT



### 83101-1 COMPONENT BOX 1

- 1) Rear X Member
- 1) Front X Member
- 1) Steering Bar 20"
- 1) Passenger Diff Drop
- 1) Driver Diff Drop

### HARDWARE BAG 1

- 2) 5/8" X 6" Bolts
- 2) 5/8" X 5" Bolts
- 2) 5/8" X 2" Bolt
- 6) 5/8" Nylock Nuts
- 12) 5/8" Washers
- 1) 9/6" x 4" bolt
- 1) 9/16" Nylock nut
- 2) 9/16" Washers
- 4) Diff Bushing MO2045
- 2) Bump Stops

### 83101-2 COMPONENT BOX 2

- 1) Left Upper A Arm Drop
- 1) Right Upper A Arm Drop
- 2) Torsion Bar Drops (Truck)
- 2) 16" Steering Couplers

### HARDWARE BAG 2

- 6) 1/2" X 1 1/2" Bolts
- 4) 1/2" X 3 1/2" Bolts
- 2) 1/2" X 4 Bolts
- 12) 1/2" Nylock Nuts
- 24) 1/2" Washers
- 4) 3/8" X 1 1/2" Bolts
- 4) 3/8" Nylock Nuts
- 8) 3/8" Washers
- 8) Alignment Washers
- 2) 11/16" Left Jam Nuts
- 2) 11/16" Right Jam Nuts

### 83101-3 COMPONENT BOX 3

- 2) 5 1/4" Taper Blocks
- 4) 9/16" X 14" Sq. U Bolts
- 8) 9/16"-18 Nylock Nuts
- 8) 9/16" Washers

## Kit Hardware Torque Specifications

Remember that actual torque may vary if lubricant is used, or extension bars are used with the torque wrench. **Torque all re-used O.E. factory hardware** to original vehicle torque specifications according to factory service manual. If in doubt concerning the torque specification of ANY fastener, always consult the factory service manual.

Always consult factory service manual for sequence and torque specification of any O.E. parts being reassembled, such as ball joint nuts, and steering tie rod ends. For hardware supplied with this kit, use the following list as a guide for fastener torque:

<b>Bolt Size</b>	<b>Torque</b>
<b>5/16</b>	<b>12-15 Ft-lbs</b>
<b>3/8</b>	<b>30 Ft-lbs</b>
<b>7/16</b>	<b>55 Ft-Lbs</b>
<b>1/2</b>	<b>70 Ft-lbs</b>
<b>9/16</b>	<b>100 Ft-lbs</b>
<b>5/8</b>	<b>110 Ft-lbs</b>

## Important Maintenance Information

It is the end user's responsibility to have all fasteners checked for proper torque after the first 200 miles, then every 3000 miles. Have a qualified professional mechanic or alignment specialist inspect the steering, suspension and driveline components immediately after installation and at regular intervals thereafter. Please see Limited Lifetime Warranty sheet included with the kit, and mail in the warranty information card. Limited lifetime warranty will only be honored if the original purchaser mails in the warranty card.

**Disclaimer Notice:** Installing this suspension system on any vehicle implies that you are in agreement with the following terms and conditions with respect to that vehicle, the vehicle owner, and any or all occupants of said vehicle at any time:

- Full Throttle Suspension is not responsible, and cannot be held responsible for any conditions of said vehicle including, but not limited to the following: 1) Any and all adverse behavior, premature failure, or breakage caused by oversized tires and wheels, improper installation, failure to follow instructions, or any general negligence caused by installer or owner of said vehicle. 2) Any breakage or premature failure caused by racing or driver negligence. 3) ANY incident determined to be caused by an increase height in said vehicle's center of gravity. 4) ANY incident determined to be caused by improper installation. 5) ANY incident determined to be caused by a failure of materials.
- Full Throttle Suspension is to be held harmless by the installer of this lift kit, owner of said vehicle, ANY occupants of said vehicle, and any parties related directly or indirectly to said vehicle or owner of said vehicle. Full Throttle Suspension is to be held harmless by all parties mentioned during the course of any and all circumstances or incidence resulting from the installation of this lift kit.
- Full Throttle Suspension offers this kit strictly as a visual improvement of said vehicle over the factory aesthetics. The fact that the suspension system works and functions well are incidental and it is not the intention of Full Throttle Suspension that said vehicle is modified for use on public highways sanctioned by the Department of Transportation, or any state or local governing body. Vehicle owner accepts sole responsibility for ensuring that said vehicle is not in violation of local, state, or federal laws or vehicle code. Please check local vehicle laws and regulations before modifying your vehicle.

By Installing This Kit or having this kit installed on your vehicle, you are implying that you agree to the above terms and conditions. Please do not install this system if you do not agree.

**Important! Please read all instructions before attempting any work on the vehicle.**

Failure to read entire instruction packet before beginning disassembly, will likely result in additional downtime spent acquiring tools, special equipment, and skilled mechanical know-how. We strongly recommend installation be done by a professional mechanic, in a shop with a suitable vehicle hoist. If attempting this installation as a do-it-yourselfer, please review this packet carefully BEFORE attempting any work on the vehicle. A well-equipped shop can perform this installation in approximately 12 hours. This packet uses standard nomenclature when referring to each side of the vehicle: LEFT side means DRIVER'S side, while RIGHT side means PASSENGER side.

## Required Tools and Equipment

Please review this list before attempting any work; it is common to spend more time finding the correct tools and equipment during the installation than actually installing the kit---save time by making sure all of these things are readily available BEFORE beginning work on the vehicle.

- Good quality safety glasses and ear protection
- Professional Quality Floor Jack (or vehicle hoist)
- Tall Jack Stands (4)
- ½ drive Socket set and ratchets with metric, standard and deep sockets
- 3/8 drive Socket set and ratchets with metric, standard and deep sockets
- Hex Sockets (recommended) OR Allen wrench (hex key) set
- Compressor w/ impact wrench and air ratchet (recommended)
- Air hammer with flat pointed chisel, and shovel tip chisel bits
- Pickle fork type tie-rod separator, and ball joint separator
- GM torsion bar unloading tool (recommended) OR 2 jaw gear puller
- Transmission Jack (recommended)
- Plasma Torch (recommended) OR Sawzal with metal cutting blades
- MIG or equivalent wire feed welder with 75-25 Argon or better
- 4" grinder (recommended), or chisels and files
- ½" drill motor and drill index, (½" and ¾" drill bits required)
- Dead blow hammer (recommended), OR suitable ball peen hammer
- Soft face hammer
- Screwdrivers
- Pliers and Channel Locks
- Sidecutter type cutting pliers
- Pointed Heel bars (recommended), OR pry bars
- Cotter pin assortment
- Tie wire and/or plastic zip ties

Items listed adjacent to the word (recommended), are highly recommended for installation but not absolutely required. Items listed with an "OR" statement means you must have at least one or the other of the item listed. DO NOT attempt installation unless you have everything on this list or suitable substitutes for the recommended tools.

### **Important!** Please read all instructions before attempting any work on the vehicle.

1) With vehicle on the ground, open hood and disconnect battery. Raise front of vehicle and secure with jack stands under the frame. When placing the jack stands, keep in mind that you will be removing the entire front suspension, torsion bars, and torsion bar cross member. NEVER ATTEMPT ANY WORK ON VEHICLE SUPPORTED WITH ONLY A JACK---ALWAYS USE JACKSTANDS! Remove both aluminum front skid plates.

2) Using GM torsion bar unloading tool, or suitable 2-jaw gear puller, release tension on the torsion bar adjusting keyway or "pork chop" within the torsion bar cross member. Remove torsion bar adjusting bolt and threaded pad from cross member, then CAREFULLY release the keyway so that it hangs loosely from the torsion bar (as shown below). Repeat on opposite side, then slide torsion bars forward to release them from the keyways and lower control arms. NOTICE: Pictures below are from a 4 door Tahoe, truck cross members

have different ends, and may look slightly different from these images. MARK EACH torsion bar side for side and end for end before removing from vehicle.





3) Remove front wheels. Remove brake line clip from upper control arm and also the brake line clip from vehicle frame. If vehicle has ABS, then CAREFULLY unplug and remove ABS wire from upper control arms and frame connection point.



4) Remove brake calipers and hang up out of the way with tie wire to the vehicle frame or bumper brackets. DO NOT let calipers hang by brake hoses. Remove brake rotors and label them for left and right side of vehicle.



5) Remove nut attaching outer tie rod end to steering knuckle; detach outer tie rod end from steering knuckle using tie rod separator. DO NOT strike threaded area of tie rod end stud. Repeat this process on opposite side of vehicle.



**NOTE: some shops prefer to remove the upper and lower control arms as a complete assembly with the steering knuckle, hub, and CV axle attached. Without the proper experience, equipment, and vehicle hoist, this can be a cumbersome and potentially dangerous operation; if this is your first installation, please follow from step 5 and disassemble the suspension to its individual parts.**

6) Remove front shocks as shown



7) Remove The 36mm Axle Nut, Remove the three 14mm hub bolts. Carefully remove hub from knuckle assembly on each side. This will allow removal of the steering knuckle from upper and lower ball joints without fighting the assembly to get the cv axle out first.





and lower ball joint nuts loosely engaged on the threads of the stud in order to catch the knuckle and prevent it from falling when it breaks loose.

10) When both upper and lower ball joints have popped loose, remove nuts by hand and CAREFULLY remove knuckle with hub assembly. Repeat these steps on opposite side of vehicle.



8) Remove nut from bottom of sway bar link on each side.



9) Remove cotter keys and loosen the nuts attaching the upper and lower ball joint studs to the knuckle. Separate the ball joint studs from upper and lower points of the knuckle using ball joint (pickle fork) separator, or by striking the knuckle directly adjacent to the ball joint stud with a ball peen hammer. NOTE: Leave both upper



11) Remove nuts, bolts and eccentric washers attaching upper control arm to frame, and carefully remove and set aside upper control arm. Repeat on opposite side



12) Remove the 6 bolts attaching inner end of CV axle to the axle flange, then CAREFULLY remove CV axle assembly. Repeat these steps on opposite side of vehicle.



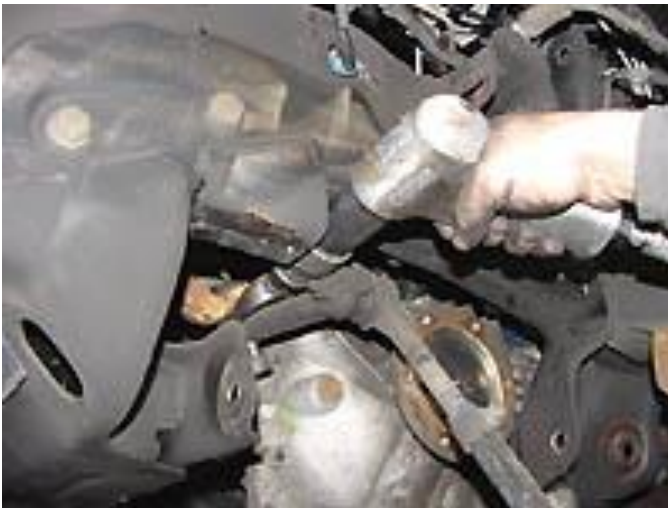
13) Remove two lower control arm pivot bolts and carefully remove and set aside torsion bar and lower control arm (it will be heavy). Repeat these steps on opposite side of the vehicle.



14) Remove sway bar and set aside.



15) Remove nuts holding steering drag link to pitman arm and idler arm, then remove drag link (steering bar) with tie-rod separator.



16) Disconnect front driveline from front differential and hang out of the way.



17) Unplug and unclip the 4x4 switch and actuator wires from the right side axle tube and hang them out of the way. Unplug the rubber vent hose from the left side of the differential third member assembly. Remove the two nuts and bolts holding the right side of the differential assembly to the channel shaped right side mounting bracket.



18) While supporting the differential with a transmission jack or floor jack, remove nuts and bolts from the two left side mounting ears attaching front third member assembly to vehicle frame. Carefully lower the differential assembly away from the vehicle and place it out of the way. Remove channel shaped right side bracket from vehicle (below right).







19) Remove torsion bar cross member from vehicle frame as shown. NOTE: 4 door Tahoe's must remove cross member AND outside drop hangers from frame. ALL OTHERS remove cross member by remove the 3 retaining bolts and nuts from the bottom of the frame rail as shown below right.



**Tahoe style**



**Truck style**

20) Using Sawzall or plasma torch, cut and remove fixed section of cross member from left side lower control arm rear pivot mount. Cut flush with backside of pocket and angle the rearward side of the cut slightly towards the outside of vehicle. You are removing the section that once provided the mounting location for the LEFT LOWER mounting ear of the differential housing.



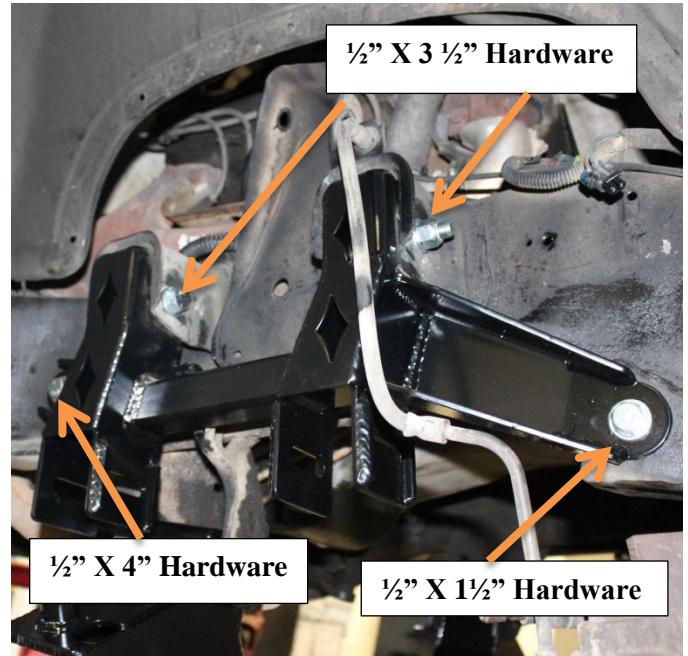


21) Next cut and remove the factory bump stops FLUSH with frame rail, or at least flush with the outer face of the shock tower as shown.



22) Dress Cuts with grinder, making sure that the cut is inboard of the flat area adjacent to the shock mount tower. Clean and spray cut areas with paint or rubberized undercoating.

23) Install upper control arm drop brackets into factory frame pockets using  $\frac{1}{2}$  x  $3\frac{1}{2}$ " supplied bolts, nuts and washers. Using drop bracket as a template, center punch and drill the  $\frac{1}{2}$ " hole through the frame at the FRONT ear of drop bracket. Insert anti-crush spacer through the frame at rear hole, and through-bolt both front and rear legs of drop bracket to vehicle frame using  $\frac{1}{2}$  x 1-1/2 bolts in the front, and  $\frac{1}{2}$  x 4" bolts in the rear with supplied nuts and washers.

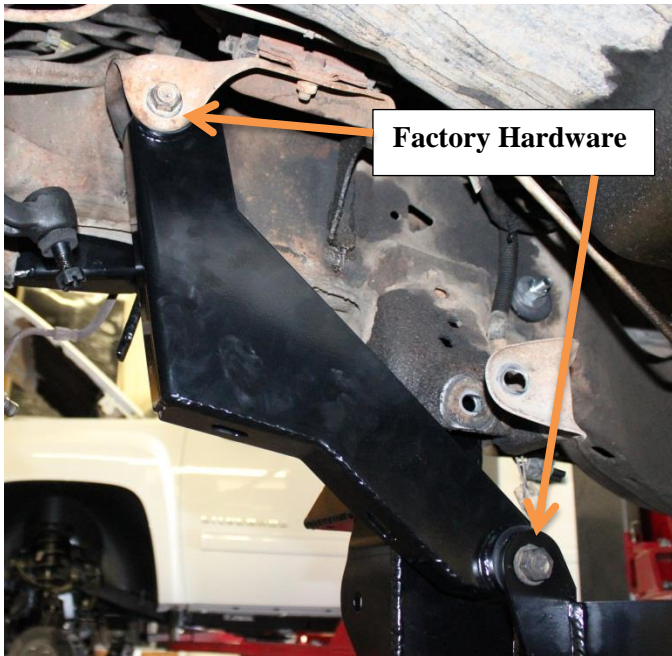


24) Install Droop stop bushings onto the pads of the lower control arm rear cross member, Then install rear cross member onto frame using factory hardware.

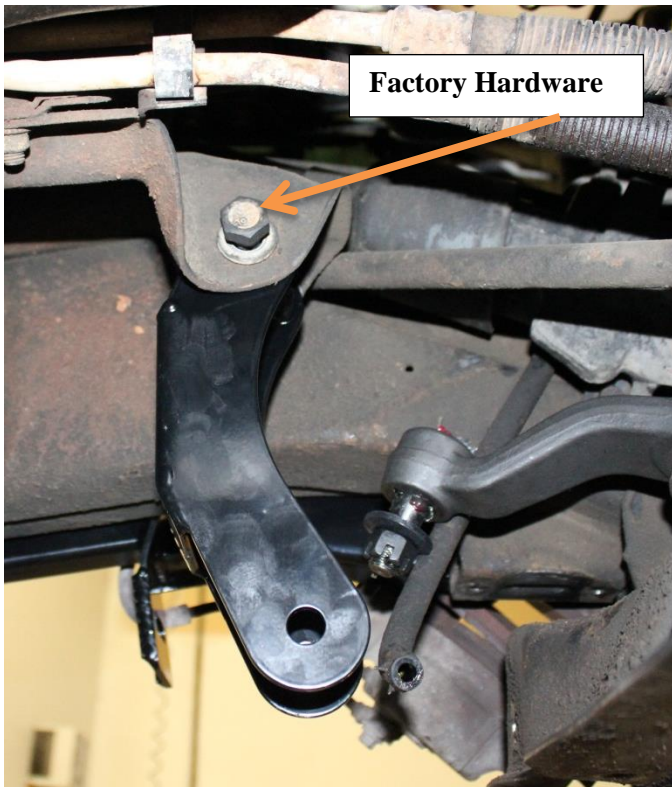




25) Install supplied bushings into RIGHT side differential drop bracket. Install drop bracket into original upper location in vehicle frame, and lower bracket on lift kit cross member using factory hardware at the upper hole, and supplied hardware at the lower hole as shown.



26) Install LEFT side differential drop bracket with the lower hole curving toward the FRONT of vehicle, using the factory bolt at the top hole as shown. DO NOT tighten at this time.

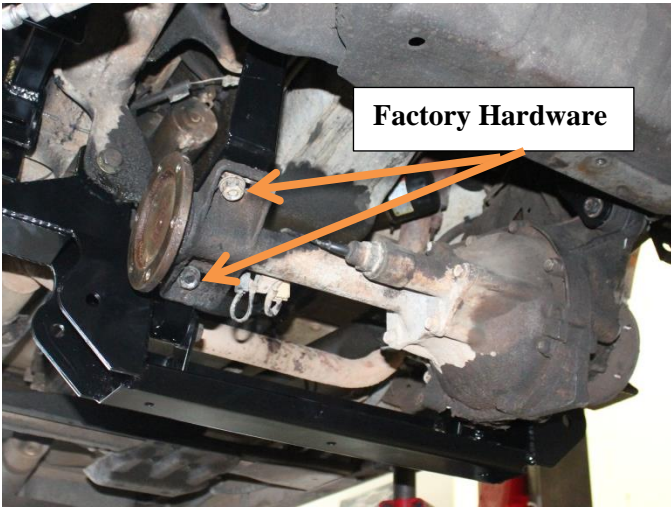


27) Clearance approximately 3/8" from the left side of the differential case fins at the location shown. It may be necessary to test fit front differential into place and check clearance several times before final installation.



28) Install differential into place with the two short factory bolts and nuts on the right, and supplied 9/16 x 4" bolts and nuts on the left mounting ears. Before tightening the front differential into place check that there is at least 1/4" clearance between the left side of the housing, and the lift kit bracket as shown below left. Also check that the differential assembly is centered in the chassis before tightening the two right side mounting bolts, (below right). Check that the differential assembly is centered by running a straightedge off of each axle flange towards the lower control arm pivot bolt hole and comparing this on each side (below right). Each side should be within 1/2" of the other. After centering the assembly, all bolts can be tightened.





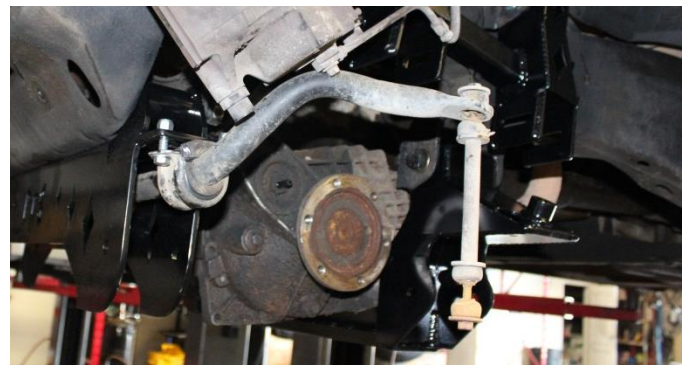
**Factory Hardware**

29) Carefully pull slack in front differential actuator wiring, and left side vent hose and reconnect to differential. Reconnect front driveline and test spin driveline by hand. Factory front driveline should work, if it binds up while turning, the upper yoke may need to be clearance slightly with a die grinder or burr.

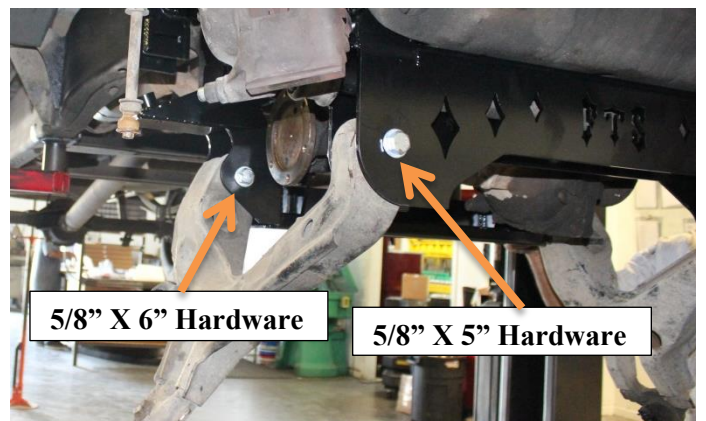
30) Install the front cross member using the factory hardware. Do not tighten at this time.



31) Install the factory sway bar using the 3/8" x 1 1/2" hardware.



31) Install the lower a arm using the 5/8" x 5" hardware on the front lower and the 5/8" x 6" hardware on the rear. Tighten the hardware attaching the cross member to the frame.



**5/8" X 6" Hardware**

**5/8" X 5" Hardware**



32) Attach the sway bar end link to the lower control arm using the factory sway bar end link hardware.



33) Install the torsion bar drops using the 1/2" x 1 1/2" hardware.



34) Install new kit supplied drag link (steering bar) to the pitman arm and idler arm. Tighten with factory nuts to factory torque specification, and use Loctite if they are not castle nuts with cotter pins. ALWAYS USE NEW COTTER PINS



35) Install the factory upper control arm using the factory bolts with the new supplied eccentric washers. Do not tighten at this time.



36) Remove the factory tie rod from the factory steering assembly, Using the supplied jam nuts locate the left tie rod and the left jam nut, screw the jam nut onto the tie rod then into the 16" supplied steering coupler. Locate the right hand tie rod and right hand jam nut , screw the jam nut onto the tie rod then into the 16" supplied steering coupler . Install the tie rod into the steering drag link . Tighten the castle nut to factory specs, install cotter pin.



37) Install front differential breather as shown

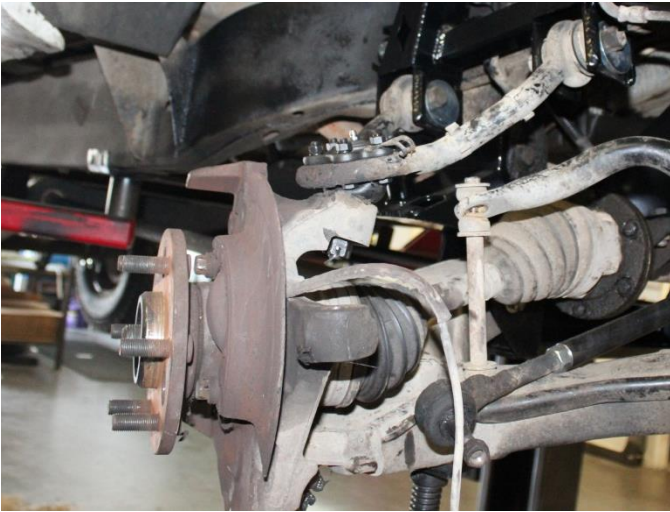




38) Install upper a arm bump stop as shown.



39) Install factory steering knuckle, CV axle and hub assembly as shown below. Tighten to factory specs.



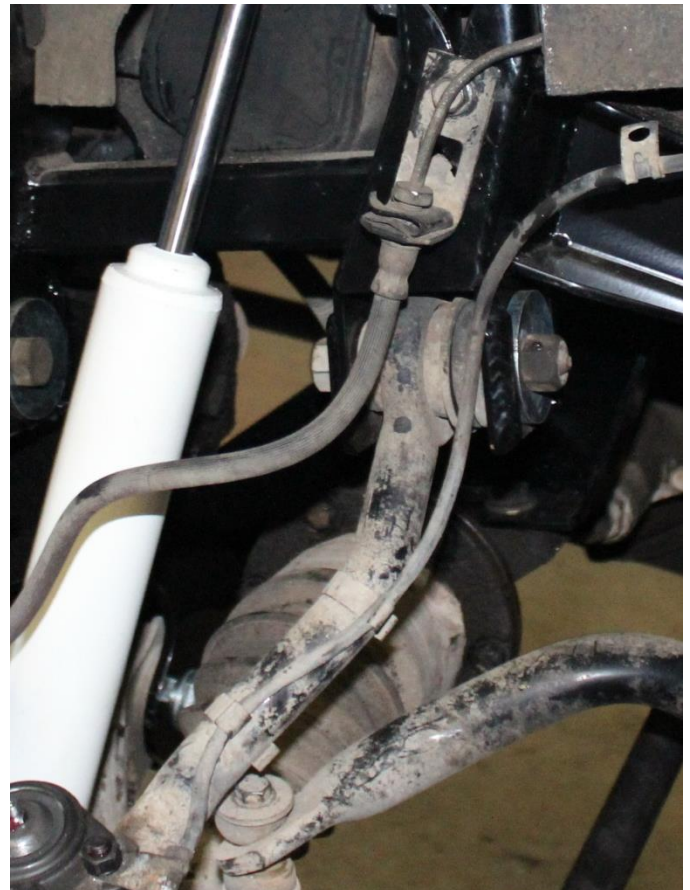
40) Install the factory outer CV axle nut, torque to factory specs. Use Loctite on the threads



41) Install the brake rotor ,caliper and tie rod as shown, tighten to factory specs.



42) Reroute and Mount the brake lines as show below.





43) Install torsion bar cross member as shown using factory hardware.



44) install front shock using factory hardware.



45) Tighten lower a arm hardware to 125ft.-lbs.



46) Tighten upper alignment cams to 90 ft.-lbs.



46) Front suspension is now complete.

**A FRONT END ALIGNMENT IS  
RECOMMENDED**

### Rear suspension

- 1) Install rear lift block, the taller portion of the block is to the rear of the vehicle. Install the shorter portion to the front of the vehicle.
- 2) Install the 9/16" u bolt and torque to 95 ft.-lbs.
- 3) Install rear shock using factory hardware.



## Product Warranty and Warnings-

FTS 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 FTS 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.

Reservoir 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 Warranty.

FTS does not warrant any product for finish, alterations, modifications and/or installation contrary to FTS instructions. Alterations to the finish of the parts including but not limited to painting, powder coating, 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.

FTS 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.

FTS makes every effort to ensure suspension product compatibility with all vehicles listed in the catalog, but due to unknown auto manufacturer's production changes and/or inconsistencies by the auto manufacturer,

FTS cannot be responsible for 100% compatibility, including the fitment of tire and wheel sizes listed. The Tire and Wheel sizes listed in FTS's catalog are only a guideline for street driving with noted fender trimming. FTS is not responsible for damages to the vehicle's body or tires.

FTS's obligation under this warranty is limited to the repair or replacement, at FTS 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. FTS is not responsible for damages and/or warranty of other vehicle parts related or non-related to the installed FTS 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 FTS.

FTS suspension components must be installed as a complete system including shocks as shown on our current website. All warranties will become void if FTS 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. FTS does not warrant products not manufactured by FTS.

Installation of FTS 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 FTS products with the consumer prior to purchase.

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

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Tech support 559-271-8685 or send email to [fts.dwgs@gmail.com](mailto:fts.dwgs@gmail.com)