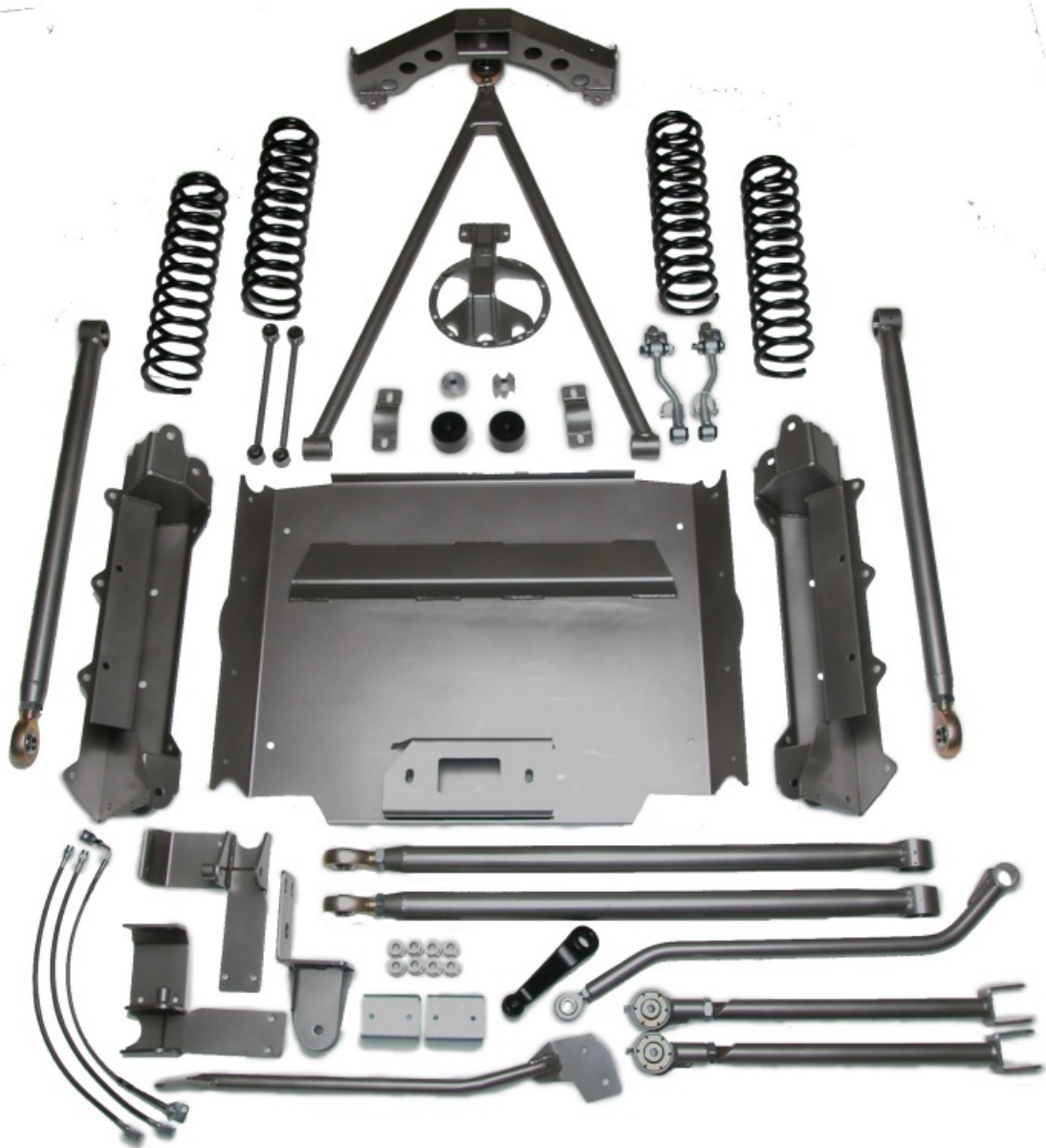




FTS7402 Jeep ZJ 4" Long Arm Suspension System





INSTALLATION INSTRUCTION

Part FTS7402 Long Arm Suspension System

93-98 Jeep ZJ Grand Cherokee

Read instructions from start to finish before installation of components

HARDWARE AND PARTS LIST

<u>CARTON A</u>	<u>Qty</u>	<u>FTS7402A continued</u>	<u>Qty</u>
<u>50-7402H Master Hardware Box Kit</u>			
<u>70-7562 Master Hardware Kit</u>			
3/8" x 1.0" NC Gr.8 Bolt	20	50-740201 Front Lower Control Arm-Uni	2
3/8" x 1-1/4" NC Gr.8 Bolt	1	50-740205 Control Arm Frame Support, Right	1
3/8" Stover Nut	8	50-740206 Control Arm Frame Support, Left	1
3/8" Flat Washers	16		
3/8" Lock Washer	1	<u>FTS7402B</u>	<u>Qty</u>
3/8" Tek Screw	3	50-740202 Rear Lower Control Arm	2
50-750616-02 Inner Frame Brake Line Tab	3	50-740203 Upper Front Control Arm, Assembled	2
10mm x 1.5" x 35mm Long Bolt	4	50-740208 Front Track Bar Frame Cross Brace	1
10mm Lock Washer	4	50-750605 Front Adjustable Track Bar	1
10mm Small Flat Washer	4	50-740709 Track Bar Frame Mount Bracket	1
1/2" x 2.5" NC Gr.8 Bolt	1	FTS205027 Front Sway Bar Link kit Assembled	1
1/2" x 3.5" NC Gr.8 Bolt	1		
1/2" SAE Flat Washer	20	<u>70-7574 V-Bar Bushing & Sleeve Kit</u>	<u>1</u>
1/2" Metal Lock Nut	10		
9/16" x 4" Bolt	8	<u>70-7564 Bump Stop Hardware Kit</u>	
9/16" x 10" NCC Gr.8 Bolt	2	3/8" x 2" Self Tapping Bolt	2
9/16" x 4.5" NCC Gr.8 Bolt	8	CA1014 Lower Bump Stop Ext, Front 3"x2"	2
9/16" Metal Lock Nut	18	CA1004 Upper Bump Stop Ext. Block	2
9/16" SAE Flat Washer	40	50-7402 Rear Upper "V" Link Support	1
Crush Sleeve, Frame			
FTS3001 Pitman Arm	1	<u>FTS7402C</u>	<u>Qty</u>
MT2693 OEM Type Transmission Mount	1	50-720501 Coil Spring, Front 4" ZJ 92-98	2
JM-16T 1" x 1-1/4"-12 Male Rod End	4	50-740501 Coil Spring, Rear 4" ZJ 92-98	2
1-1/4" Jam Nut	4		
50-750608-04 High Mis-Alignment Spacer	8	<u>FTS7402D</u>	<u>Qty</u>
<u>70-7563 Rear Support & V-Link Component Kit</u>		50-740204 Upper Rear V-Link,	1
3/4" x 4.5" Gr.5 Bolt	1		
3/4" Flat Washer	2	<u>FTS7402E</u>	<u>Qty</u>
50-750609-04 High Mis-Alignment Spacer	2	50-740207 Center Skid Plate	1
CA1006 Aluminum Spacer, Rear Upper Mount	2		
<u>70-7560 Front Trac Bar Hardware Kit</u>			
KMX-12 3/4" Chromoly Rod End	1		
50-750608-04 Mis-Alignment Spacers	2		
CA1018 Black Vecton Trac Bar Bushing	2		
SLE 151 Trac Bar Sleeve	1		

IMPORTANT NOTES

WARNING: This suspension system will enhance the off-road performance of your vehicle. It will handle differently, both on and off-road, from a factory equipped passenger car or truck. Extreme care must be used to prevent loss of control or vehicle rollover during abrupt maneuvers. Failure to drive this vehicle safely may result in serious injury or death to the driver and passengers. ALWAYS WEAR your seat belts. Reduce your speed, and AVOID sharp turns and other abrupt maneuvers.

Before installing this system, have the vehicle's alignment checked by a certified technician. The alignment must be within factory specifications and the frame of the vehicle must be sound (no cracks, damage or corrosion).

Do not chrome, cad or zinc plate any of the components in this system. Changing the coated surface of components will void the warranty of your Full Traction Suspension.

This suspension system was developed using 32" x 11.50 tires.

Mandatory Requirements

92-98 Jeep ZJ

- *Slip Yoke Eliminator
- *Rear CV Drive Shaft Replacement
- *Exhaust Modification

The required installation time for this system is approximately 15 hours. Installation time will vary. Allow time for transfer case and exhaust modifications.

Thank you for purchasing the best suspension system available. For the best installed system, follow these instructions. If you do not have the tools or are unsure of your abilities, have this system installed by a certified technician.

FULL TRACTION SUSPENSION IS NOT RESPONSIBLE FOR DAMAGE OR FAILURE RESULTING FROM AN IMPROPER OR MODIFIED INSTALLATION.



ADDITIONAL INFORMATION

Congratulations on your purchase of the highest quality suspension system available for the Jeep ZJ. Some of the service procedures require the use of special tools designed for specific procedures. The following tools and supplies are recommended for proper installation of this system.

- Jeep Factory Service Manual
- Pitman Arm Puller Tool
- Coil Spring Compressor
- Universal Steering Linkage Puller
- Ball Joint Separator
- Drill Motor
- Assorted Drills: 1/8" & larger
- Torque Wrench
- 1/2" drive Ratchet and Sockets
- Assorted Combination Wrenches
- Heavy Duty Jack Stands
- Wheel Chocks or Blocks
- Hydraulic Floor Jacks
- Hammer
- Wire Brush (to clean mounting surfaces)
- White Lithium, Moly or similar Lubricant
- Grease Gun
- Tape measure
- Safety Glasses (wear safety glasses at all times)




IMPORTANT
READ BEFORE YOU BEGIN INSTALLATION

The installer of this system should be prepared to modify the exhaust system. The new suspension system cannot be installed around the stock exhaust, therefore the vehicle is disabled without the exhaust. Remove the rear tailpipe section of the exhaust system. Removing the rear tailpipe section will allow the FTS rear suspension components and the v-link to be mounted easily.

After installation of the rear v-link and the remaining suspension components, a new tailpipe must be fabricated to complete the exhaust system. *Alternative:* The exhaust may also be unbolted from the "B" pipe flange next to the engine block. *** It is the installers decision how to do the exhaust.*

A rear slip yoke eliminator conversion & CV type drive shaft is not required up to 4.0" of suspension lift. However, we recommended to change the shaft in terms of strength and eliminate any vibration that may occur in the rear drive shaft . Typically, no change in the front drive shaft is required. Check the parts and hardware against the parts list to assure that your kit is complete. Refer to page #2 of these instructions for a list of tools and supplies needed to perform the installation. Use these instructions as a guide, however experienced installers may want to change the order of installation procedures to suit their needs.



General Disassembly

1. Raise and support the vehicle frame with jack stands. Support the front axle with a floor jack. Remove all wheels. Place reference marks on the front drive shaft and axle. Disconnect and remove the front drive shaft from the axle.

2. With the front axle supported, remove the front shocks, steering stabilizer, pitman arm, front track bar, and front sway bar end links. Do not remove the “D” bushings or the front sway bar from the frame.

3. Remove the front brake line bracket from the frame to allow the axle to drop down far enough to remove the front coil springs. New brake line brackets will be installed later during this installation. Remove both lower front control arms. **Fig.1**



4. Remove both front coil springs.

5. Before removing the factory front upper control arms, support axle so it does not rotate or pivot. Remove front factory upper arms. Save factory bolts to be reused on new FTS control arms.



Removing factory control arm mounting brackets

6. Remove front lower control arm frame mount. Using an electric grinder, make an incision grind mark to use as a guide to grind off the factory weld. **Fig.2** Grind both inside and outside frame surfaces. Finish frame smooth with a dual action sander and paint with semi-gloss black spray paint. Repeat the same for the rear lower control arm mounts.

Removing factory Transmission cross-member

7. Remove all bolts holding factory cross-member from frame. A new oem type transmission mount is supplied in kit.

Note: new mount is supplied for 1995 & later models only. If vehicle is earlier than 1995, retain the same factory rubber mount.

Installing Side Skid Brackets & Center Skid Plate to Frame

Note: A 90 degree side angle type drill is required to install the side skid bracket properly on the inside frame surface.

1. Side Skid brackets are left and right. Starting on the left side of the vehicle, **line up the forward factory transmission cross-member hole** in the bottom of the frame with the hole in the side skid bracket. Insert a bolt to hold the bracket in place. **Fig. Xx** On the other end of the side skid bracket, use a clamp to hold the side skid bracket in place.

2. After using the stock mounting points to locate the side skid bracket, prepare to use skid bracket as a templet to center punch hole locations to be drilled in subframe. This procedure allows skid brackets be to correctly located without measuring or guesswork.

3. Mark & centerpunch for the new holes to be drilled. Drill 1/4" pilot holes. After starter/pilot holes are drilled, drill final larger 1/2" diameter holes.

Next, mark & centerpunch the holes on the inside frame rail. Drill holes to 1/2" using 90 degree side angle drill. **Note: Do not attempt to drill through both sides of the frame at the same time. This will cause holes to become mis-aligned.**

Next, remove all bolts and the side skid from the frame. On the outside holes only, using a 3/4" diameter hole saw, enlarge the holes to 3/4" diameter. **(Outside holes only)** Insert frame crush sleeves into the frame holes. **Fig.4**



Factory frame reference hole



Fig.4



Again position side skid rail in place and install using 1/2" bolts, washers and nuts and washers and torque to 75lbs./ft. Repeat same for the right side of the vehicle.

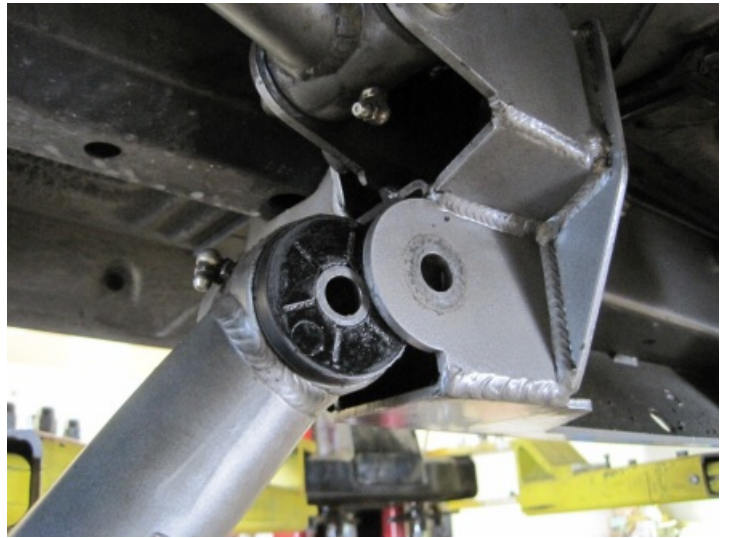
Installing Center Skid Plate

1. The new center skid plate now serves as the transmission cross member/mount. The forward set of holes are used on Align the bolt studs from the Transfer case mount with the holes in the center skid plate. Next, align the bolt holes in the Side Skid brackets with the holes in the skid plate. Install 3/8" dia x 1" bolts and flat washers into the Full-Traction pre-installed nutserts.

2. Install the factory nuts on the transmission mount studs and secure tight.



Lower control arm being installed.



Installation for the upper control arm mount

Factory frame hole is circled. In **Fig.1** Make use of the factory frame hole for the 9/16 X 10" long bolt.

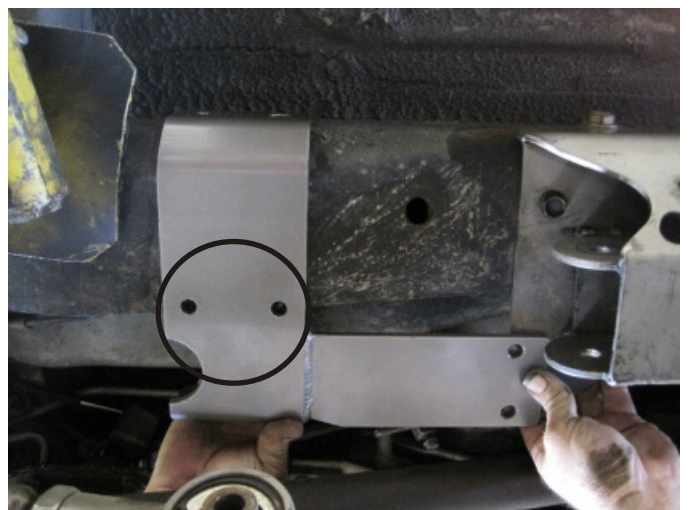


Position Bracket to frame as shown in photos. Repeat procedure for opposite side of vehicle.

Drill holes where circled.



Drill holes to secure bracket to frame as shown in this photo. Drill holes where circled.



New Full-Traction upper control arm support brackets are Left and Right. Position the new FTS upper control arm support bracket and align the rear holes with the holes in the side skid rail. Install bolts into holes and tighten. Drill a new hole through the frame and install the 9/16" x 10" long bolt through the frame and secure. Using the support bracket as a template, mark and center-punch the frame for the remaining smaller holes to be drilled into the frame. Drill the 3 smaller holes using a 5/16" drill.



Installing Full-Traction Upper and Lower Front Control Arms

The Upper front arms are shipped pre-assembled, however arms must be adjusted for length to correct the pinion angle. Insert 9/16" I.D. Mis-Alignment spacers into Heim joint on the end of the control arm.

Install upper front control arms to the frame using the 9/16" x 10" bolt through the bracket. Install the arm to the axle using 9/16" x 4" grade 8 bolts as shown. Torque grade 8 bolts to 85lbs/ft. The upper arms have the joint welded on an angle. The joints will be angled inward when mounted on the axle.



1. Install new upper front control arms using factory 10mm bolts. Torque bolts to 35lbs/ft.

Install the axle end of the upper arms using 9/16" x 4" bolts and nuts.

Refer to factory service manual for torque specs on factory bolts.

2. Install new drop pitman arm on the steering box. .



Lower Front Control Arm being attached to front axle.



Upper Front Control Arm being attached to upper axle mount

Installing the Full-Traction Track-Bar Bracket

1. Install the track bar bracket to the frame using factory hardware as shown. No drilling is required.

2. Install the cross brace to the frame and track bar bracket as shown. Install track bar and cross brace using 1/2 x 3.5" bolt as shown in Fig.1

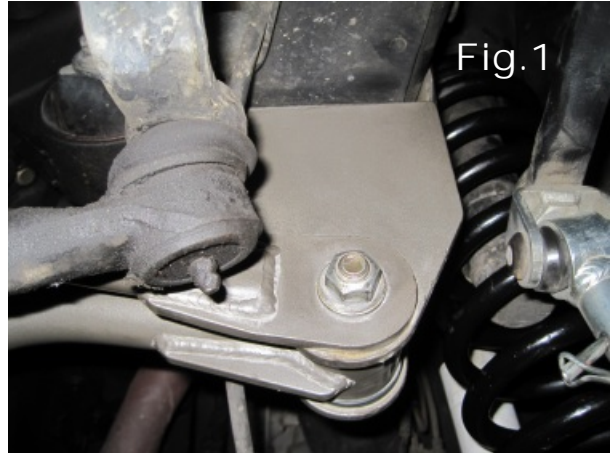
On the Right side frame rail, locate the factory holes in the metal and install 1/4" and 3/8" Tek screws to secure the cross-brace.

3. Attach the track bar to the drop-down bracket as shown in **Fig.1** Before the track bar is installed onto the axle, enlarge hole in axle bracket to 1/2" Diameter.

. Install **KMX-12 3/4" Chromoly Rod End** and **#50-750608-04 Mis-Alignment Spacers** into the new track bar. Mount track bar to axle using 1/2" x 2.5" bolt, nut, and washers.

NOTE: Attach track bar to the axle after vehicle is sitting on level pavement with weight on the suspension. The axle must be centered under the vehicle before the Track Bar is attached to the new bracket. Vehicle must be professionally aligned after all parts have been installed.

4. **Front Lower Bump Stop** - Drill a 5/16" hole into the coil spring base cup. Install the front lower **CA1014 3"x2" Black Poly bump stop extensions** using the 3/8 x 2" self tapping bolts. Screw the bolts into the spring seat as shown in **Fig.2** Retain the factory upper foam bump stop as is.



Front Track Bar Mis-Alignment Spacers Installed



NOTE: Failure to install bump stop extensions will void the warranty of your Full-Traction Suspension system.

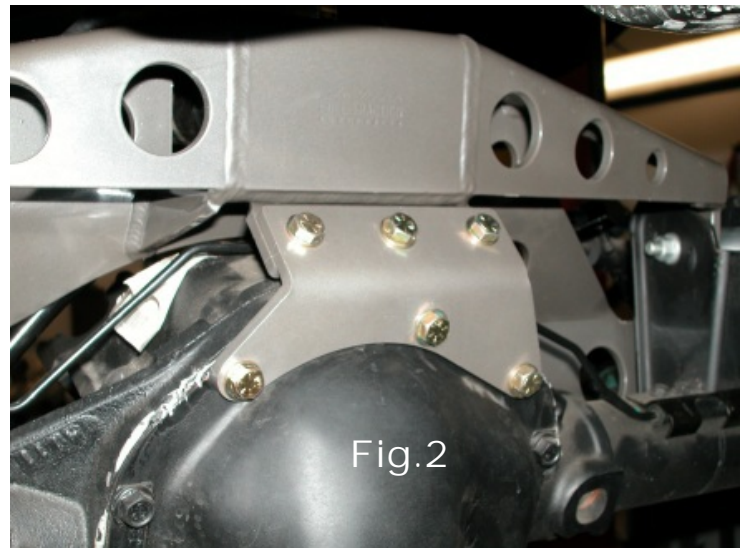
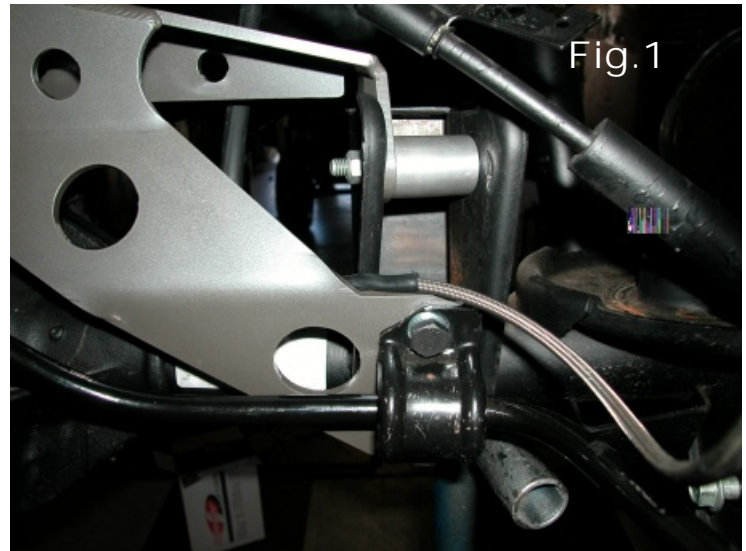
Installing Upper Rear Differential “V” Link Support

1. Support rear frame with stands.
2. Using a jack to support the rear axle, remove the rear factory trac bar from axle and frame. Remove factory rear shocks. Remove rear coil springs. Discard these items.
3. Save factory shock bolts to be reused.
4. Remove the rear sway bar (if equipped) and save all hardware to be reused.
5. Disconnect the parking brake cable attached to the rear upper control arms. Remove the factory rear upper and lower control arms.
6. Position the new Full-Traction Upper “V” Link Support bridge over axle.

Install **50-740712** aluminum barrel spacers on each side and secure to the axle using 10mm x 80mm bolts as shown in **Fig.1**

Install rear differential Dana axle cover brace bracket using new longer 5/16” dia bolts and flat washers. Install the V-link bar using the Nut Tab on the bottom side of the V-Bar mount. The nut tab and the cover brace bracket will overlap. Mark the location of the holes using the cover brace as a template. Drill holes into the nut tab bracket and secure using 5/16” hardware as shown in **Fig.2**

NOTE: Failure to install differential reinforcement plate may cause damage to the drivetrain and axle bridge and will void the warranty of your Full-Traction Suspension system.

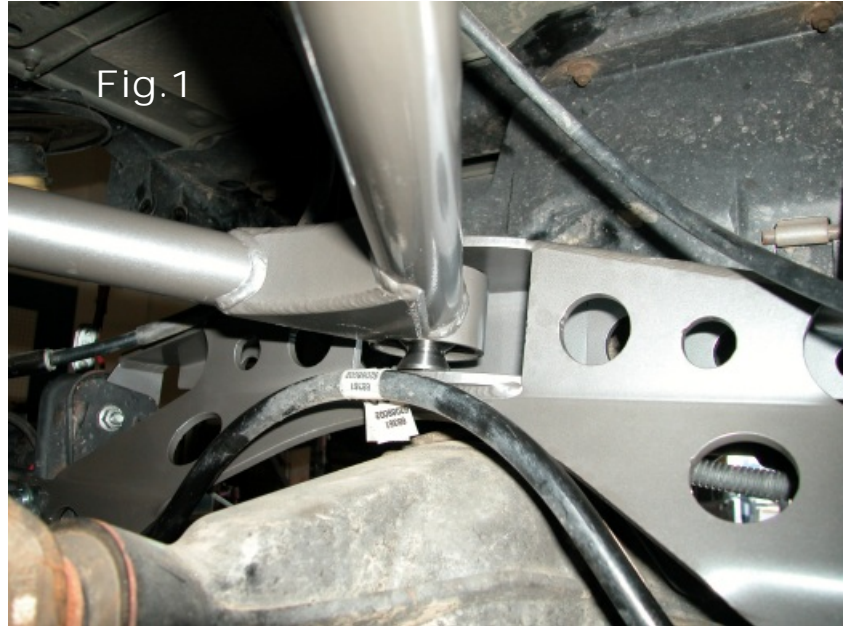


Installing Upper Rear “V” Link

1. Insert Vecton Material bushings & Heavy wall DOM sleeves into eyelets of “V” Link. Bushings must be greased liberally with lithium grease or similar type assembly lube. Failure to lube bushings prior to assembly will result in suspension squeaks and premature wear of the bushings. Install JMX16T Heim Joint and 5/16” x 1.5” pinch bolt to secure the heim in the collar.

2. Align the eyelets of the “V” link to the upper side skid bracket mounting point. Install 9/16” x 4” bolts, nuts and washers. Leave bolts and nuts hand tight.

3. Insert # 50-750609-04 3/4” I.D. high mis-alignment spacers on both sides of the heim Joint. To install the “V” link to axle, tilt (pivot) the rear axle backwards to align bearing with bolt hole in upper “V” link support. Carefully guide the assembly into the Well of the support. Insert 3/4”x 4.5” bolt & washer and thread into the nut tab under the support and torque to 150 lbs./ft. **Fig.1**



The V-Link is shown in place **Fig.2 & 3**



Fig.2



Fig.3

Installing Rear Coil Springs & Rear Lower Control Arms & Adjustments

***Shock absorbers are required to complete the installation of this suspension system
- Optional with this system -***

1. Remove factory rear bump stops located on the frame. Reuse factory hardware to bolt the new extension block to the frame. Install rear bump stops to the new blocks using 3/8" x 1" bolts, flat washers and nuts.

Install the rear coil springs one at a time. Check to see that the upper factory rubber insulator is in place on top of the coil prior to assembly. Install rear shocks to hold rear coil springs in place.

2. The rear lower control arms measure longer than the front lower arms.

NOTE:

Apply anti-seize or similar lubricant to ALL threads of the control arms to ensure smooth operation. Check for damage on all threaded surfaces to ensure ease of length adjustment to control arms, track bars, etc.

2. Rotate the adjustable end of the control arm counterclockwise to expose some of the threads

NOTE: As a starting measurement, the new FTS control arms should be assembled with the heims showing approx 50% of the threads outside the tube, including the jam nut. Adjust length as necessary. Final length adjustments of the control arms will need to be made after vehicle is professionally aligned and road tested. Install rear lower control arms with the adjustable end toward the frame using 9/16" x 4" Gr.8 bolts.

After all adjustments are performed, apply final torque to the large 1-1/4" jam nuts on the control arms.

Installing Front Coil Springs

***Shock absorbers are required to complete the installation of this suspension system
- Optional with this system -***

1. With front axle supported and front bump stop extensions in place, install front coil springs. The top of the coil has a smaller tapered opening than the bottom of the coil. Rotate the coil spring until it rests in the coil cup properly. Install front shock absorbers.



Front Coil Springs with bump stop extensions correctly installed.

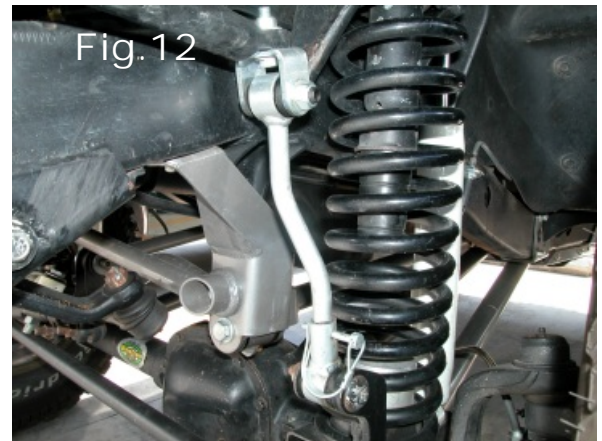
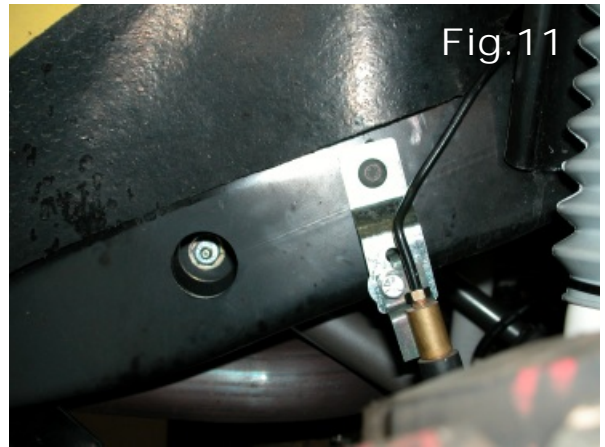
Installing Front Brake Line Extension Brackets

1. Remove factory brake bracket from the frame and replace with new FTS brake line brackets. Install CA1006 front right & left brackets. **Fig.11** If suspension was purchased with heavy duty brake lines, install lines and bleed brake system.

Installing New Front Sway Bar Disconnect Links

1. Sway bar disconnect links are pre-assembled. Remove **CA1005** upper bracket and install onto the sway bar as shown in **Fig.12** Rotate bracket and secure top bolt using a wrench. Install disconnect links to bracket and secure to lower factory bracket using factory hardware.

Return vehicle to flat level pavement and attach front adjustable Track Bar to the axle. Axle must be centered under the vehicle for easy installation of the Track Bar. Install using 1/2" x 3.5" Bolt, nut, washers and mis-alignment spacers.. Torque Track bar bolt to 75lb./ft.



IMPORTANT - READ THIS **Basic Specifications Chart**

Rear CV Drive Shaft & Slip Yoke Eliminator

CV drive shaft and Slip yoke eliminator is not mandatory, but highly recommended. After installation of this system, the installer must measure for the correct length rear CV drive shaft. There should be no front drive shaft modification required on ZJ models.

Exhaust Modification

Custom fabricated type required. Exhaust must be custom built to allow proper clearance of all suspension components. Small catalytic converters and turbo type mufflers are available from major manufacturers.

Shock Absorbers

92-98 Jeep ZJ	Front Length:	24.50 Extended
92-98 Jeep ZJ	Rear Length:	24.50 Extended



**Typical Rear CV Drive Shaft
& Slip Yoke Eliminator**

NOTE: Length of all shocks is critical. There are NO EXCEPTIONS to extended length allowed from the listed shock sizes. Full-Traction Suspension is not responsible for breakage, damage or abuse to any installed component due to improper installation or misapplication of components.

CHECKS AND ADJUSTMENTS. VERY IMPORTANT

- *Alignment of front wheels will be required, use factory specifications.
- *Recheck all hardware for tightness after the first 100 miles.
- *To adjust location of front axle (side to side), Adjust rod end located at the end of the Adjustable track bar to move axle to desired location. Tighten jam nut on Rod End, then torque.
- *Steering stops can be adjusted by use of spacers behind welded jam nuts or by use of a secondary jam nut (not provided).
- *Headlights should be adjusted.
- *Rotate front and rear drive shafts with suspension hanging. Check for binding.

Place Warranty Sticker Here

WARRANTY

Full Traction Limited Warranty

About our warranty

Full Traction components may have minor finish damage to powder coated or plated surfaces which may occur during shipping and is not covered under warranty. Full Traction Suspension warrants each new Full Traction Component against factory defects in material and workmanship for 1 year after date of purchase. Full Traction Suspension systems are sold as complete systems and must be installed as such per Full-Traction installation instructions. Any substitutions of other manufacturers components or exemptions of required components will immediately void the warranty. Full-Traction suspension guarantees that all of its products are of the finest quality and free from manufacturing defects. Any product that has been manufactured incorrectly or is of a defective nature will be repaired or replaced at the discretion of Full-Traction Suspension. Returns: Only after written or verbal approval, send such part(s) and proof of purchase, via prepaid freight with an RGA (Return Goods Authorization) number to: Full-Traction Suspension 6951 McDivitt Dr. Bakersfield Ca 93313 USA. Shipments without an RGA number clearly designated on the outside of all containers or collect shipments will be refused. To obtain RGA(s) call 661/398-9585

What is not covered

Suspension and steel fabricated components: Limited (12) month warranty excluding the following items: Tie rod ends, bushings, hardware, brake lines, heim joints. These parts are subject to wear and are not considered defective when worn. They are warranted for 90 days from the date of purchase for defects in workmanship. Shock absorbers are covered under our limited warranty. Products or components installed on vehicles other than those specifically indicated in the Full-Traction Suspension catalog or website. Products or components which have been subjected to abuse, accident, alteration, modification, improper installation, tampering, negligence, misuse, or products installed on a vehicle used in sanctioned racing events. A race is defined as any contest between two or more vehicles, or any contest of one or more vehicles against the clock, whether or not such contest is for a prize. This warranty does not include vehicles used for government or commercial purposes. Full Traction does not warrant any product not manufactured by Full Traction Suspension. Full Traction Suspension products are not covered under warranty outside the United States of America. Full Traction Suspension shall not be liable for any loss, damage, or injury, whether ordinary, direct, special, incidental or consequential damages, arising from the manufacture, sale, installation, re-sale, delivery, possession, handling or use of its products. Full Traction Suspension is not responsible for typographical errors either in pricing or in content. Warranties, policies, and prices subject to change without notice.

Installer's Safety Warning

Full-Traction Suspension recommends our products to be installed by certified technicians only. These recommendations pertain only to Full-Traction Manufactured Products. Efforts to install our system without experience and knowledge may jeopardize the operating safety of the vehicle.

Detach and mail or fax to the address below

Name _____ Phone Number () _____

Address _____ City _____ State _____ Zip _____

Products Purchased from: _____ Date Purchased _____

Installed By _____ Date Installed _____

Vehicle make _____ Model _____ Year _____

Installation Comments _____

Product Part Number FTS7402 Description: Jeep ZJ 4" Long Arm Suspension System

Mail or Fax To:
Full Traction Suspension
6951 McDivitt Dr
Bakersfield Ca 93313

Fax: 661-847-0189

Warranty Registration Number _____



WARRANTY FORM

WARRANTY FORM