



INSTALLATION INSTRUCTIONS

**2011-17 GM 2500/3500HD 4WD
4" SUSPENSION KIT**

FTS21230

K1121 4" BASIC SYSTEM W/ PERF SHOCKS		
1	FTS21230	COMPONENT BOX 1
1	FTS21231	COMPONENT BOX 2
1	FTS21232	COMPONENT BOX 3 - 2500HD
2	FTS7338	FRONT PERFORMANCE SHOCK
2	FTS7299	REAR PERFORMANCE SHOCK

K1121DL 4" BASIC SYSTEM W/ DLSS SHOCKS		
1	FTS21230	COMPONENT BOX 1
1	FTS21231	COMPONENT BOX 2
1	FTS21232	COMPONENT BOX 3 - 2500HD
2	FTS811262	FRONT 2.25" DIRT LOGIC N/R SHOCK
2	FTS810942	REAR 2.25" DIRT LOGIC N/R SHOCK

K1121M 4" BASIC SYSTEM W/ STEALTH SHOCKS		
1	FTS21230	COMPONENT BOX 1
1	FTS21231	COMPONENT BOX 2
1	FTS21232	COMPONENT BOX 3 - 2500HD
2	FTS6338	FRONT STEALTH SHOCK
2	FTS6019	REAR STEALTH SHOCK

K1122DL 4" BASIC SYSTEM W/ DLSS RESI SHOCKS		
1	FTS21230	COMPONENT BOX 1
1	FTS21231	COMPONENT BOX 2
1	FTS21232	COMPONENT BOX 3 - 2500HD
1	FTS801262D	FRONT 2.25" DIRT LOGIC W/RESI SHOCK (DRIVER)
1	FTS801262P	FRONT 2.25" DIRT LOGIC W/RESI SHOCK (PASS)
2	FTS810942	REAR 2.25" DIRT LOGIC N/R SHOCK

FTS21230 COMPONENT BOX 1		
2	FT20277	OUTER TIE ROD
1	FT20748	DIFF BRACKET (DRIVER)
1	FT20749	DIFF BRACKET (PASSENGER)
2	FT20484	UPPER SHOCK MOUNT
1	FT20777	DIFF BRACKET (REAR)
1	FT20747D	4" HD SPINDLE (DRIVER)
1	FT20747P	4" HD SPINDLE (PASS)

FTS21232 COMPONENT BOX 3 - 2500HD		
4	FT755U	U-BOLT SQ 3/4-16 X 14 X 3.100
1	FT20768	TORSION BAR DROP BRACKET (DRIVER)
1	FT20769	TORSION BAR DROP BRACKET (PASSENGER)
1	FT20770	SHOCK MOUNT BUMP STOP (DRIVER)
1	FT20771	SHOCK MOUNT BUMP STOP (PASSENGER)
1	FT20775	BUMP STOP W/ SWAY BAR MOUNT (DRIVER)
1	FT20776	BUMP STOP W/ SWAY BAR MOUNT (PASSENGER)
2	FTBK21	2" BLOCK

FTS21231 COMPONENT BOX 2		
1	FT20744	FRONT CROSSMEMBER
1	FT20745	REAR CROSSMEMBER
1	FT20778	DIFF SKID PLATE
1	FT20782	HARDWARE KIT
1	FT20772	HARDWARE SUBASSEMBLY
1	FT20522	8 X 180 1/4" WHEEL SPACER

NOTE: TO ORDER WEARABLE REPLACEMENT COMPONENTS DO NOT USE PART NUMBERS SHOWN ON THIS INSTRUCTION SHEET. GO TO FABTECH WEBSITE AND LOOK UP WEARABLE REPLACEMENT PARTS TO FIND THE PROPER PART NUMBER TO ORDER.

FT20772		HARDWARE SUBASSEMBLY
2	FT1020	BUSHING
2	FT120	LOWER SHOCK WASHER 1.000 X .563 X .310
1	FT181	SLEEVE .625 X .500 X 2.375
1	FT20767	REAR BRAKE LINE BRACKET (DRIVER)
1	FT20492	REAR BRAKE LINE BRACKET (CENTER)
1	FT20766	REAR BRAKE LINE BRACKET (PASSENGER)
2	FT20512	ABS BRACKET
1	FT20511	REAR BRAKELINE BRACKET
1	FT21230I	INSTRUCTIONS
1	FT30182	NUT TAB
1	FTAS12	STICKER FT BLUE 10X4 DIE CUT
1	FTAS16	DRIVER WARNING DECAL
1	FTREGCARD	REGISTRATION CARD

FT20782 - HARDWARE KIT		LOCATION
14	M18 FLAT WASHER	
6	M18-2.5 C-LOCK NUT	
2	M18-2.5 X 70 MM HEX BOLT	BUMP STOP
2	M18-2.5 X 120 MM HEX BOLT	CONTROL ARM (FRT)
2	M18-2.5 X 150 MM HEX BOLT	CONTROL ARM (REAR)
2	1/2-13 X 2-3/4" HEX BOLT	LWR SHOCK MOUNT
8	1/2-13 X 1-1/4" HEX BOLT	UPPER SHOCK/ SKID
42	1/2 SAE WASHER	
21	1/2-13 C-LOCK NUT	
8	1/2-13 X 1-1/2 HEX BOLT	BUMPSTOP/ DIFF MNT
4	1/2-13 X 1-3/4 HEX BOLT	
2	1/2 LOCK WASHER	
3	1/2-13 X 3-1/2 HEX BOLT	DIFF MOUNT
1	THREAD LOCKING COMPOUND 1 MIL	
2	M12 SPLIT LOCK WASHER	
2	M12 WASHER	
2	M12-1.75 X 40 MM HEX BOLT	DRIVER DIFF
7	1/4-20 X 1" HEX BOLT	BRAKE LINE (REAR)
4	1/4-20 X 1/2" HEX BOLT	BRAKE LINE (FRONT)
9	1/4-20 NYLOCK NUT	
18	1/4 SAE WASHER	
1	5/16-18 X 3/4" HEX BOLT	
2	5/16 WASHER	
1	5/16-18 C-LOCK NUT	
1	5/16 SELF TAPPING BOLT	
2	9/16-12 X 3-1/2" HEX BOLT	TORSION DROP
4	9/16 SAE WASHER	
2	9/16-12 C-LOCK NUT	
8	3/4 SAE WASHER	
8	3/4-16 NYLOCK NUT	UBOLTS
4	NEOPRENE CLAMP	



- TOOL LIST -

Required Tools (Not Included)

Basic Hand Tools
Floor Jack
Jack Stands
Assorted Metric and S.A.E sockets, and Allen wrenches
Torque Wrench
Die Grinder w/ Cutoff Wheel or Sawzall

- PRE-INSTALLATION NOTES -

READ THIS BEFORE YOU BEGIN INSTALLATION -

Check all parts to the parts list above before beginning installation.

Read all instructions thoroughly from start to finish before beginning the installation. If these instructions are not properly followed severe frame, driveline and / or suspension damage may occur.

Check your local city and state laws prior to the installation of this system for legality. Do not install if not legal in your area.

Prior to the installation of this suspension system perform a front end alignment and record. Do not install this system if the vehicle alignment is not within factory specifications. Check for frame and suspension damage prior to installation.

The installation of this suspension system should be performed by two professional mechanics.

This suspension must be installed with Fabtech shock absorbers.

Use the provided thread locking compound on all hardware.

WARNING- Installation of this system will alter the center of gravity of the vehicle and may increase roll over as compared to stock.

Vehicles that receive oversized tires should check ball joints, uniballs, tie rods ends, pitman arm and idler arm every 2500-5000 miles for wear and replace as needed.

Verify differential fluid is at manufactures recommended level prior to kit installation. Installation of the kit will reposition the differential and the fill plug hole may be in a different position. (For example, if the manufacture recommends 3 quarts of fluid, make sure the diff has 3 quarts of fluid). Check your specific manual for correct amount of fluid.

FOOTNOTES -

- Fits extended and crew cab models only

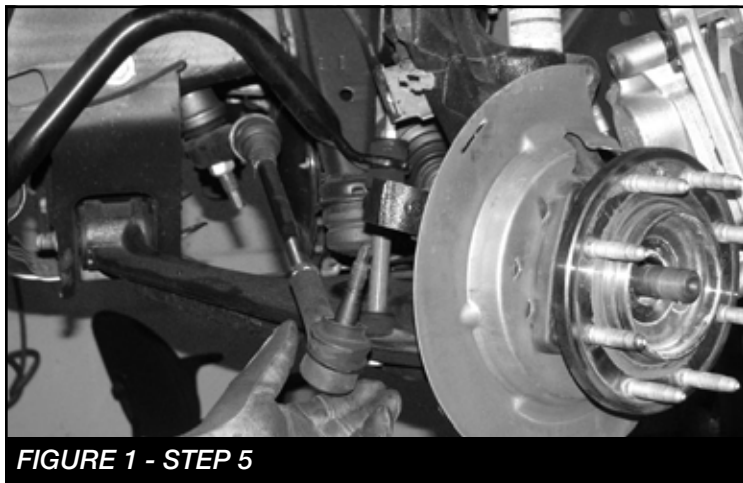
Recommend Tires and Wheels:

- Use 35/13.50R18 tire w/ 18x9 wheels w/ 5-3/4" BS w/ minor trimming
- Use 35/13.50R20 tire w/ 20x9 wheels w/ 5-3/4" BS w/ minor trimming

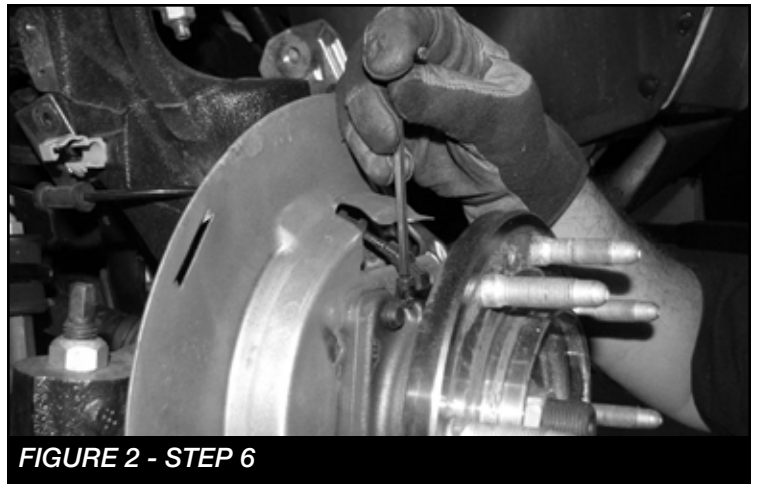
- INSTRUCTIONS -

FRONT SUSPENSION

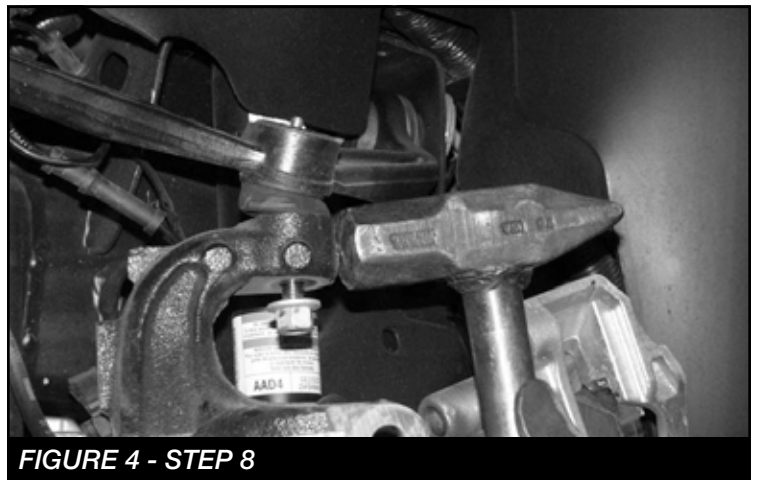
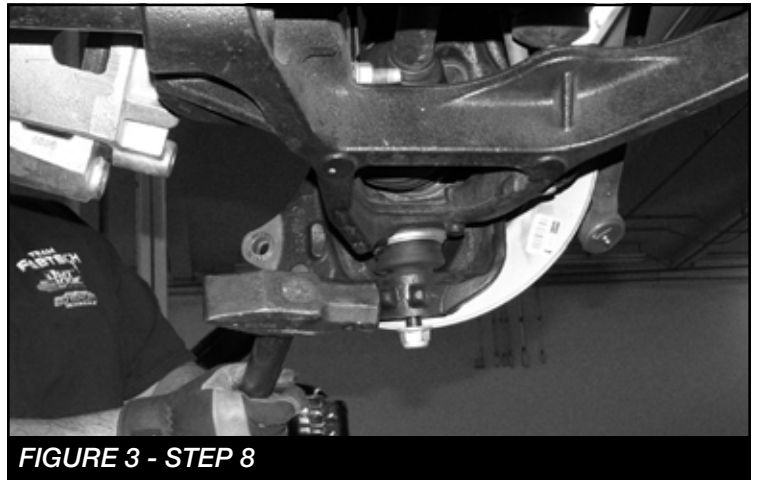
1. Disconnect the negative terminal on the battery. Jack up the front end of the truck and support the frame rails with jack stands. **NEVER WORK UNDER AN UNSUPPORTED VEHICLE!** Remove the front tires.
2. Locate the torsion bar adjusting cams and threaded bolts. Measure exposed threads of torsion bar 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 cross member 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. Remove the sway bar link ends from the sway bar and lower control arm.
4. Remove and discard front factory differential skid plate and splash shield.
5. Disconnect the tie rod ends from the steering knuckle by striking the knuckle to dislodge the tie rod end. **SEE FIGURE 1**



6. Remove the brake hose bracket from the top of the steering knuckle. Remove the caliper from the rotor and place above the upper control arm during this portion of the installation. Remove brake rotor from the steering knuckle. Unbolt the wheel speed sensor connection from the hub and control arm. **SEE FIGURE 2**



7. Remove axle nut, washer and the 4 hub bolts on backside of knuckle. Remove bearing hub assembly including O-ring from knuckle. Retain parts and hardware for reinstallation.
8. Loosen 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. Remove and retain nuts, discard knuckles. **SEE FIGURE 3-4**



9. Remove and discard the front factory shocks. Save hardware. **SEE FIGURE 5**

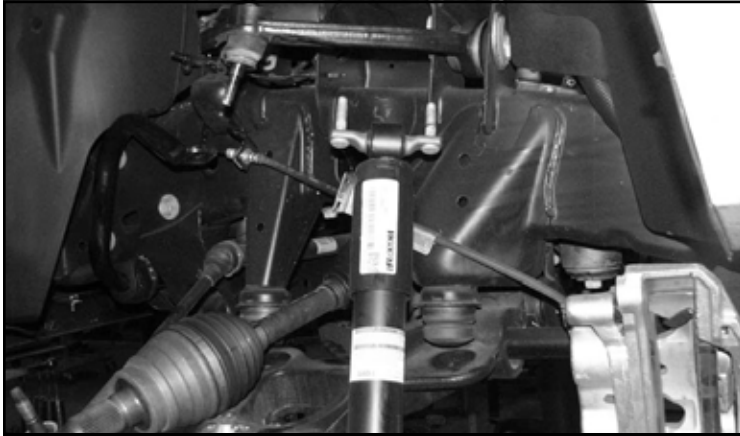


FIGURE 5 - STEP 9

10. Disconnect CV axles from differential housing and remove axle assembly. Save hardware. **SEE FIGURE 6**

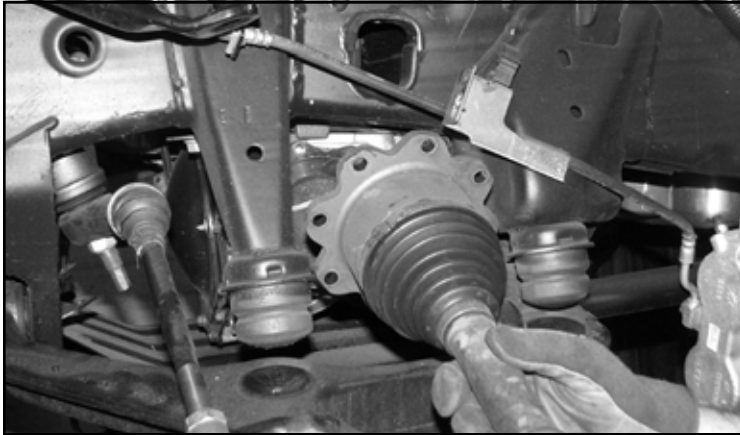


FIGURE 6 - STEP 10

11. Remove the lower control arms from the frame. Retain the arms and hardware for reinstallation. **SEE FIGURE 7**

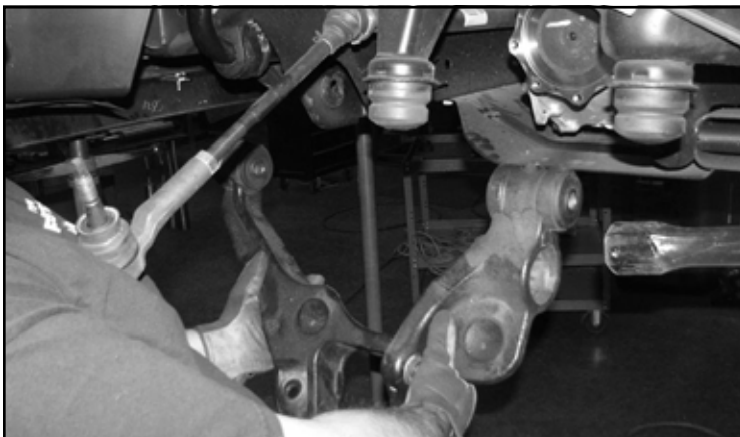


FIGURE 7 - STEP 11

12. Disconnect front drive shaft from differential housing. Retain bolts and u-joint clamps for reinstallation.

13. Remove the stock differential rear cross member and discard. **SEE FIGURE 8**



FIGURE 8 - STEP 13

14. Disconnect the differential housing electrical connection and vacuum line from differential housing.

15. Remove the differential housing assembly from vehicle. **SEE FIGURE 9**

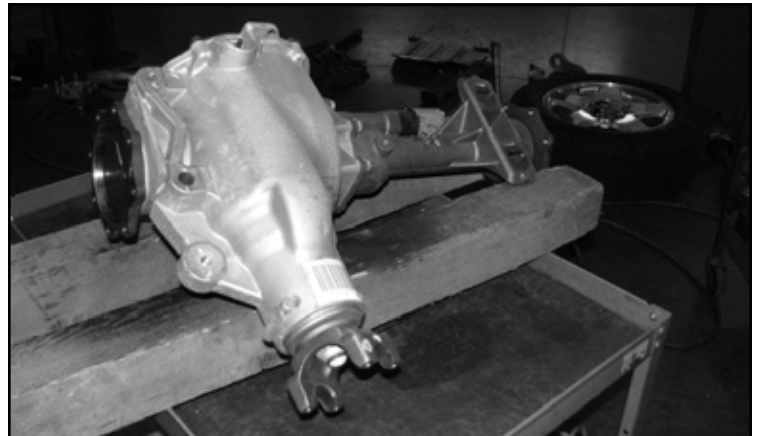


FIGURE 9 - STEP 15

16. Locate the driver side rear mount on the differential. Using a die grinder, grind the diff like shown in **FIGURES 10-11**. Next, drill out the same diff mount hole using a 1/2" drill bit.

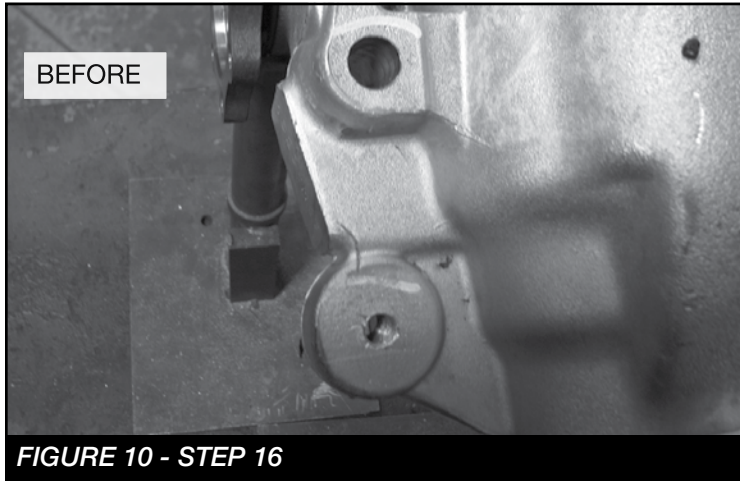


FIGURE 10 - STEP 16

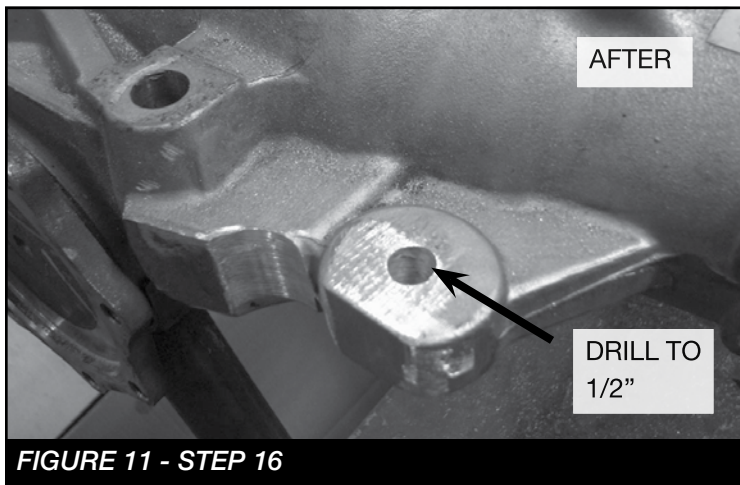


FIGURE 11 - STEP 16

17. Locate the driver side lower control arm pocket closest to the rear of the vehicle, measure 1-3/8" from the center of the pivot hole of the pocket and mark a vertical and horizontal line on the pocket. Using a Sawzall cut the pocket. **SEE FIGURE 12-13**

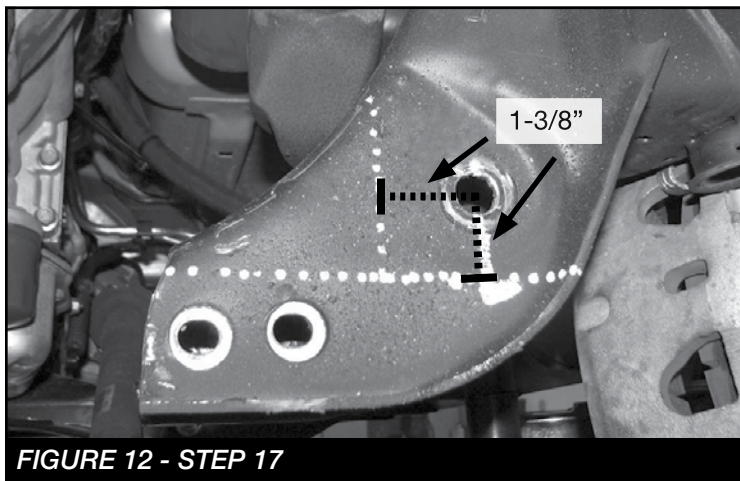


FIGURE 12 - STEP 17

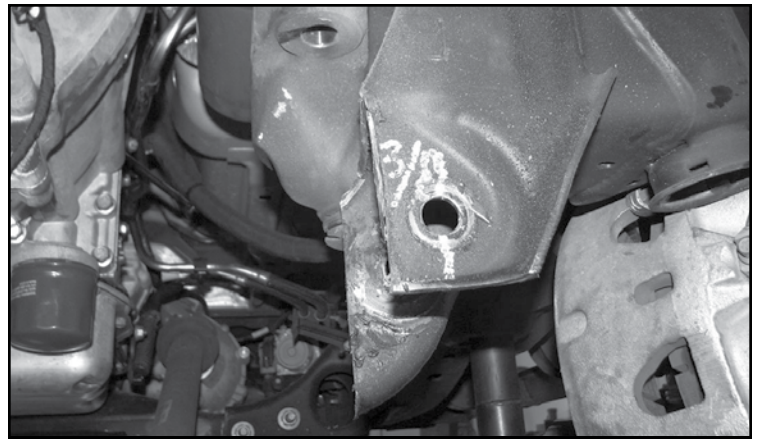


FIGURE 13 - STEP 17

18. Locate the passenger side lower control arm pocket. From the center or the control arm pivot hole, measure 1-3/8" down and make a straight line across on the front side only. Using a sawzall, cut the front portion of the pocket only. **SEE FIGURES 14-15**

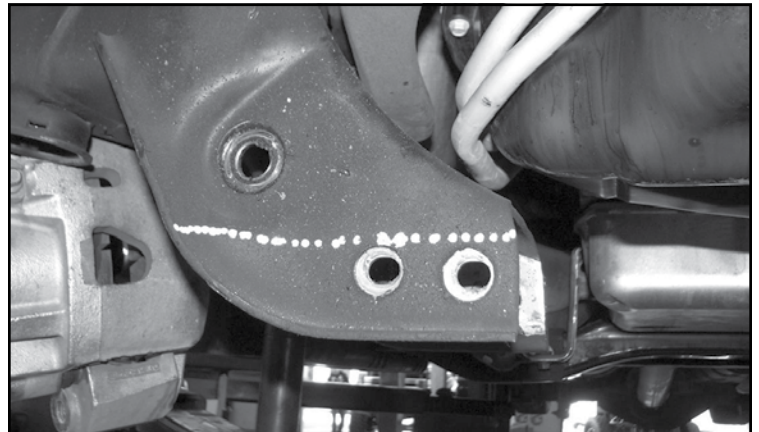


FIGURE 14 - STEP 18

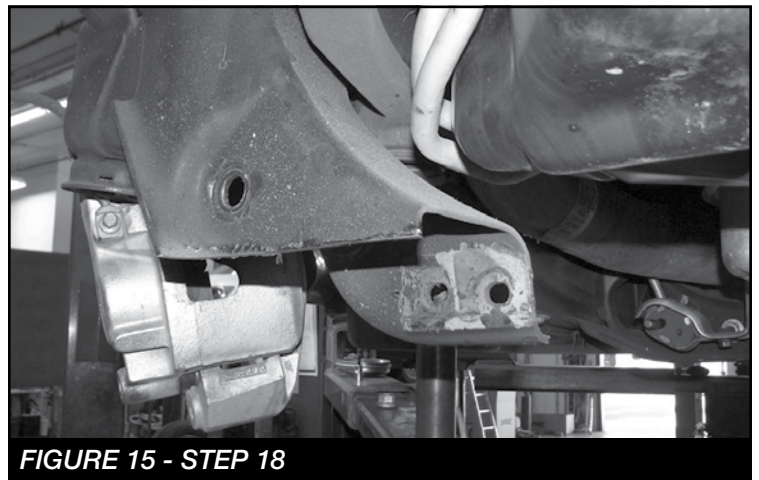
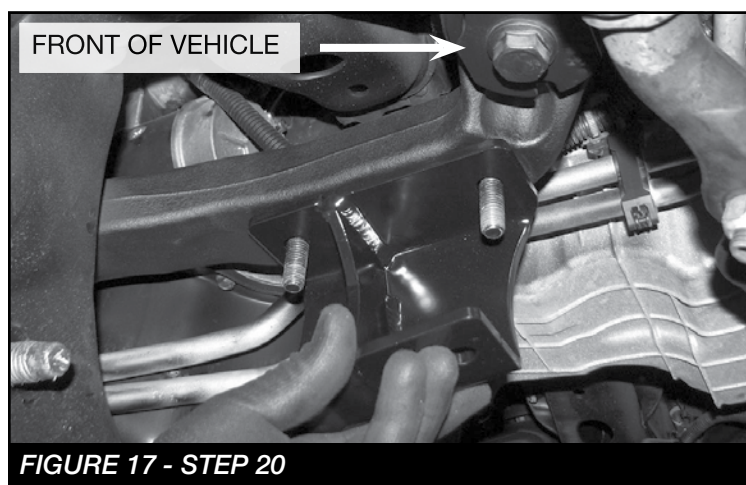


FIGURE 15 - STEP 18

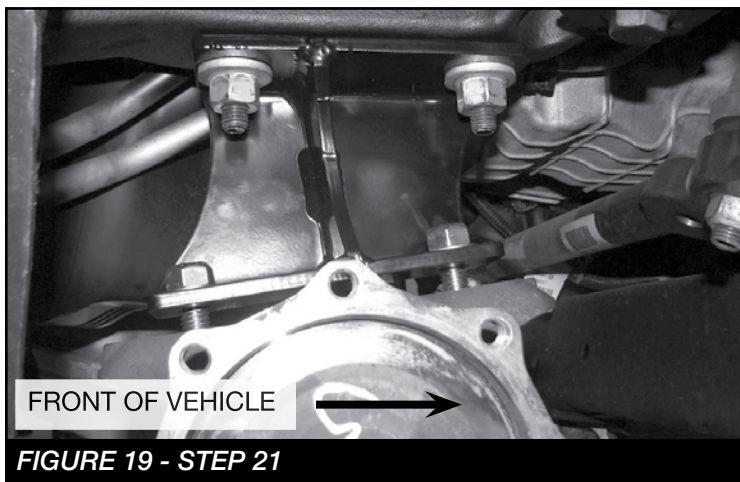
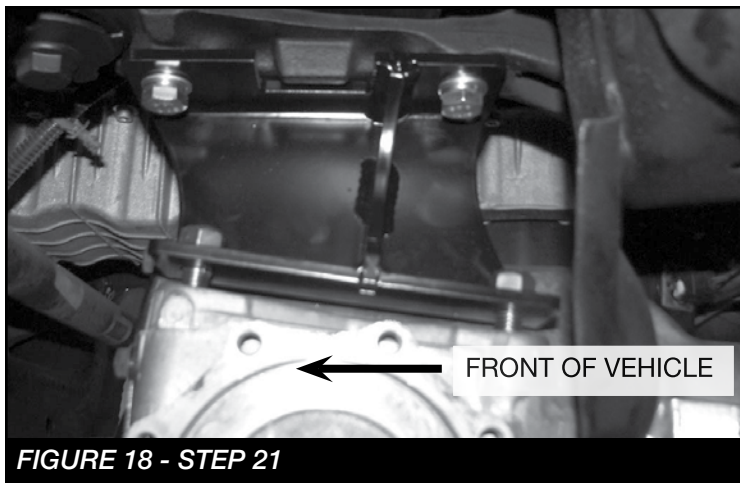
19. Locate and install the Fabtech Driver side Diff bracket (FT20748) to the Driver side of the vehicles bottom factory frame mount. The smaller taper should face the front of the vehicle. Using two M12-1.75x40mm Bolts, Lock washers and flat washers, torque to 100 ft-lbs. **SEE FIGURE 16**



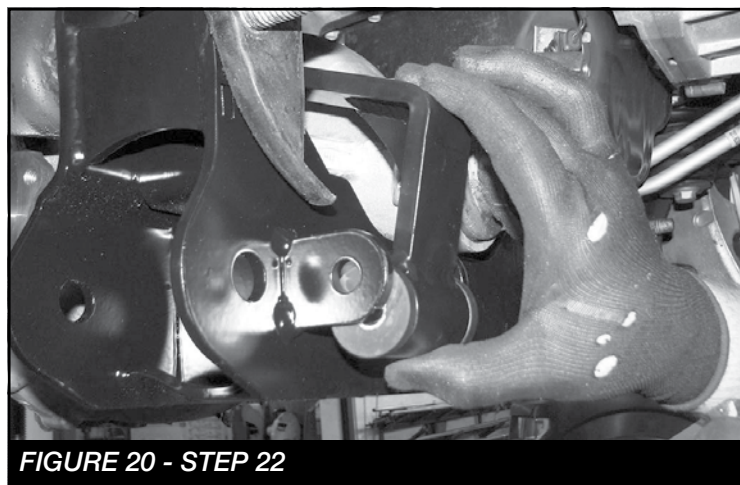
20. Locate and install the Fabtech Pass side Diff bracket (FT20749) to the Passenger side of the vehicles bottom factory frame mount using the factory hardware. Torque to 120 ft-lbs **SEE FIGURE 17**



21. Re-install the factory differential using the supplied 1/2" X 3-1/2" bolts, nuts and washers on the driver side and the 1/2" X 1-1/2" bolts, nuts and washers on the passenger side. Torque all 1/2" hardware to 127 ft-lbs. **SEE FIGURES 18-19**



22. Install the new Fabtech rear crossmember (FT20745) using the factory bolts. Leave loose. Next, Insert (2) FT1020 (Bushings) and a FT181 (Sleeve) into FT20777 (Rear diff bracket). Install the FT20777 onto the rear crossmember using the supplied 1/2" X 3-1/2" bolt, nut and washers. Then, install a 1/2" X 2-1/2" bolt and washer through the FT20777 bracket and the differential using FT30182 (Nut Tab). Leave loose. **SEE FIGURES 20**



23. Install the new Fabtech front crossmember (FT20744) using the factory hardware. Leave loose. **SEE FIGURE 21**



FIGURE 21 - STEP 23

24. Locate FT20770 (bump stop front bracket) and factory driver side lower control arm. Place the FT20770 onto the arm by lining up the boss hole and existing factory hole. Use the M18 X 70mm bolt. Mark the second hole on the control arm. Remove and drill to 1/2" **SEE FIGURES 22-23**

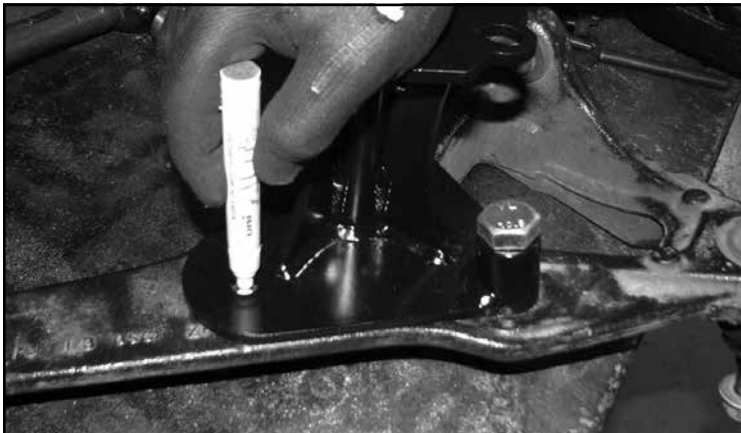


FIGURE 22 - STEP 24



FIGURE 23 - STEP 24

25. On the same control arm, Install the FT20775 (bump stop rear bracket) using the factory lower shock bolt. Mark the second hole. Remove bracket and drill to 1/2". **SEE FIGURE 24-26**



FIGURE 24 - STEP 25



FIGURE 25 - STEP 25



FIGURE 26 - STEP 25

26. Repeat step 24-25 on the passenger side lower control arm using FT20771 & FT20776.

27. Install both lower control arms into the Fabtech crossmember pockets using the supplied M18 X 120mm hardware for the front pivot and M18 X 150mm hardware for the rear pivot. Leave loose. **SEE FIGURE 27**



FIGURE 27 - STEP 27

28. Install the new Fabtech spindles FT20747D & FT20747P to the upper and lower control arms. Torque to upper ball joint to 45 ft-lbs and the lower to 70 ft-lbs. **SEE FIGURE 28**



FIGURE 28 - STEP 28

29. Re-install the CV shafts using the factory hardware. Torque to 100 ft-lbs **SEE FIGURE 29**



FIGURE 29 - STEP 29

30. Install the hub assembly and dust shield. Torque the 4 factory bolts to 160 ft-lbs. Re-install the brake components and HUB center nut. **SEE FIGURE 30**



FIGURE 30 - STEP 30

31. Install FT20778 (Skid plate) using the supplied 1/2" X 1-1/4" bolts, nuts and washers. Torque to 127 ft-lbs. **SEE FIGURE 31**



FIGURE 31 - STEP 31

32. Proceed to torque all the differential and crossmember hardware except the lower control arm pivot bolts. These will be torqued once its on the ground.

- M12 - 100 ft-lbs
- M18 - 300 ft-lbs
- 1/2" - 127 ft-lbs

33. Install FT20770 (bumpstop front) on the Driver side lower control arm using the supplied M18 X 70mm (torque to 200 ft-lbs) and 1/2" X 1-1/2" (torque to 127 ft-lbs) hardware. **SEE FIGURE 32**



FIGURE 32 - STEP 33

34. Install FT20775 (Bumpstop rear) on the Driver side lower control arm using the factory bolt and 1/2" X 1-1/2" hardware. Torque to 127 ft-lbs. **SEE FIGURE 33**



FIGURE 33 - STEP 34

35. Repeat step 33-34 on the passenger side lower control arm using FT20771 & FT20776.
36. Locate the factory brake line bracket on the front brake lines. **CAREFULLY** cut the brackets off and discard. **SEE FIGURE 34.** Using the supplied adel clamps and 1/4" hardware, install the brake lines to the back side of the spindle. **SEE FIGURE 35**



FIGURE 34 - STEP 36

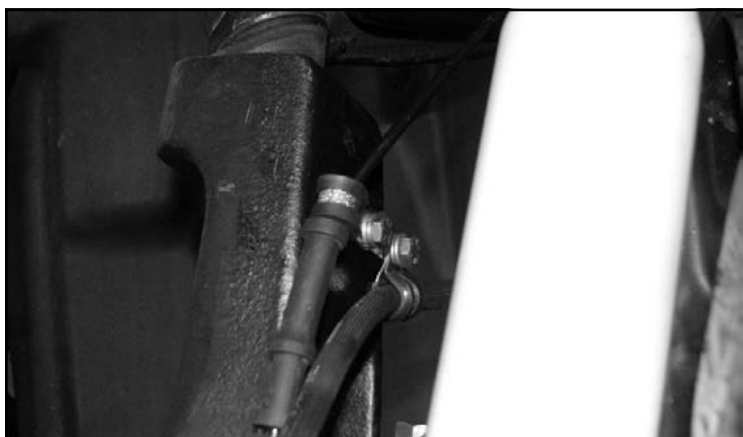


FIGURE 35 - STEP 36

37. Install FT20484 (upper shock plate) into the upper shock bucket using the supplied 1/2" X 1-1/4" hardware. Torque to 127 ft-lbs. Repeat on passenger side **SEE FIGURE 36** **NOTE: If installing resi shocks refer to shock instructions for resi mount installation.**

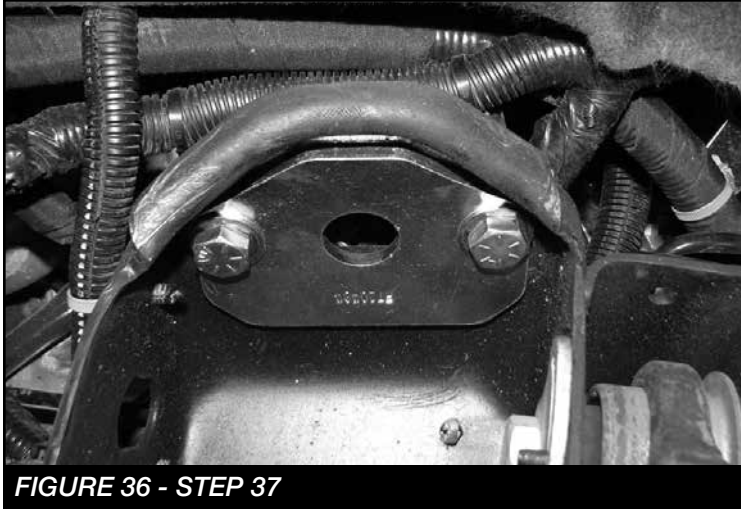


FIGURE 36 - STEP 37

38. Install the front shocks using the supplied hardware and 1/2" X 2-3/4" bolt for the lower mount. **NOTE: Install FT120 washer on the axle side to fill the gap in the lower mount.** Torque to 127 ft-lbs. **SEE FIGURES 37-38**



FIGURE 37 - STEP 38

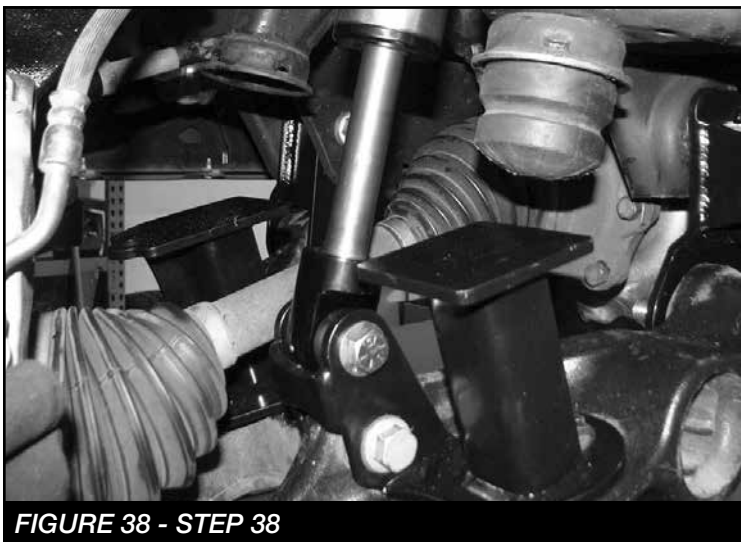


FIGURE 38 - STEP 38

39. Re-install the factory end links through the new Fabtech bracket. Torque to 120 ft-lbs. Remove the factory outer tie rod ends and install the new Fabtech FT20277 tie rods. Install onto the new spindle Torque to 60 ft-lbs. **SEE FIGURES 39-40**

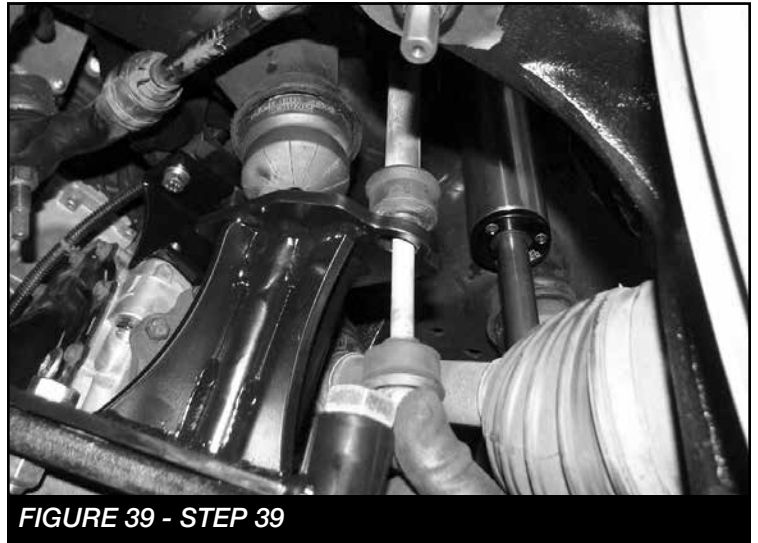


FIGURE 39 - STEP 39



FIGURE 40 - STEP 39

40. Locate the factory ABS module on the inside of the driver side frame. This will need to be temporarily moved to access the factory torsion bar/key crossmember bolt. Once it is moved and the bolt is accessible, remove the crossmember by removing the 2 bolts. Save hardware. **SEE FIGURES 41-42**



FIGURE 41 - STEP 40

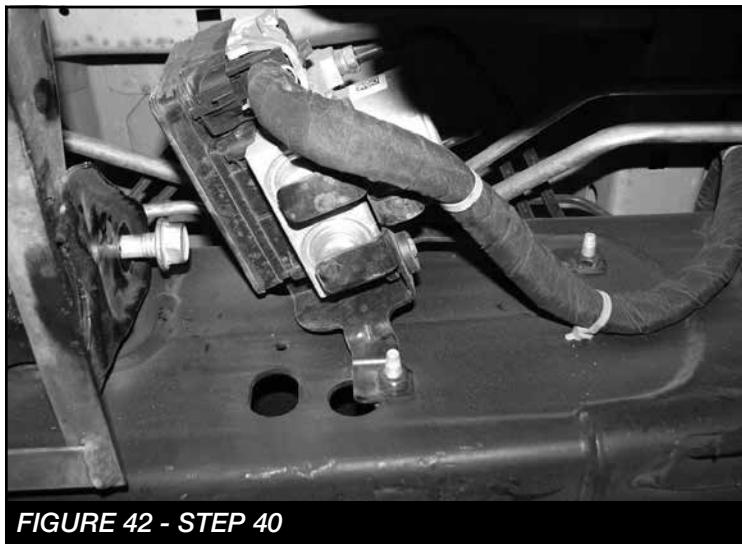


FIGURE 42 - STEP 40

41. Locate both FT20768 & FT20769 (Driver and Pass torsion bar drop). Install the brackets using the supplied 9/16" X 3-1/2" hardware where the torsion bar crossmember was originally located. Leave loose. **NOTE: The brackets should be install with the long extension facing the rear of the vehicle. SEE FIGURE 43**



FIGURE 43 - STEP 41

42. Install the factory torsion bar crossmember to the new brackets using the factory hardware. Mark the 2 holes on the back side. Remove and drill to 1/2". **SEE FIGURE 44**



FIGURE 44 - STEP 42

43. Re-install the torsion bars into the lower control arms and slide forward enough so it does not interfere with re-installing the crossmember. **SEE FIGURE 45**



FIGURE 45 - STEP 43

44. Torque the 9/16" hardware on the drop brackets to 184 ft-lbs. Next, re-install the factory crossmember using the factory bolts and 1/2" X 1-1/2" hardware. **NOTE: The 1/2" bolts will need to be installed from the inside of the crossmember.** Torque the factory hardware to 160 ft-lbs and 1/2" to 127 ft-lbs. **SEE FIGURE 46**



FIGURE 46 - STEP 44

45. Reinstall the torsion keys and torsion bars.

REAR SUSPENSION

46. 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 and u-bolts. Lower axle down slowly. Use care not to over extend the brake hose.
47. Disconnect the wheel speed sensors at the bumpstop pads on driver and passenger side as well as the brake lines on the rear differential. Disconnect the e-brake line at the driver side just near the front leaf spring mount.
48. With the rear end supported, remove and discard the factory u-bolts and blocks.
49. The block pin hole on the pad will need to be drilled out to 3/4" **SEE FIGURE 47**



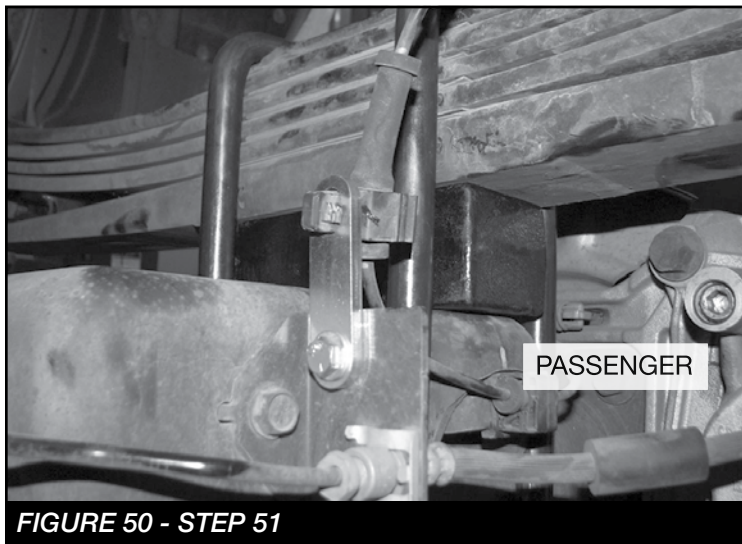
FIGURE 47 - STEP 49

50. Install the new FTBK21 (2" Block) and u-bolts. Install the block with the small taper towards the front of the vehicle. Torque the u-bolts to 317 ft-lbs. **SEE FIGURE 48**

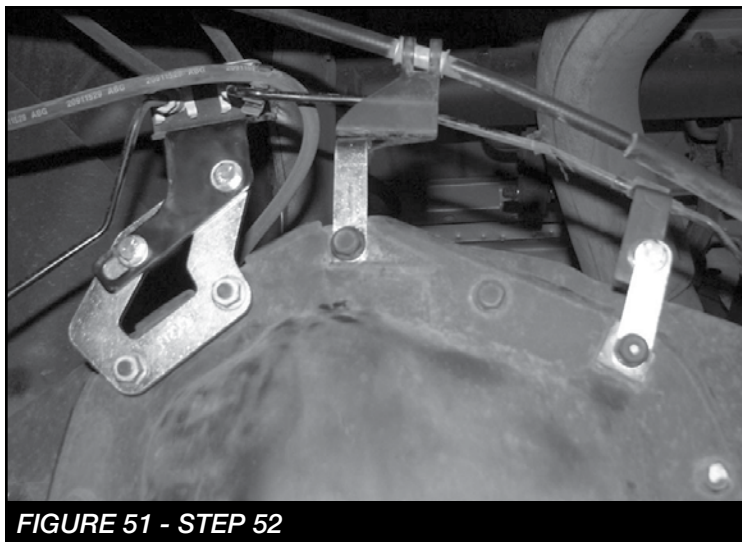


FIGURE 48 - STEP 50

51. Install FT20512 (ABS Bracket) on both sides of the vehicle at axle bumpstop pads using the supplied 1/4" hardware. **SEE FIGURES 49-50**



52. Install the FT20491, FT20492 and FT20766 (rear brake line bracket) using the factory hardware and 1/4" hardware. **SEE FIGURE 51**



53. Install the E brake drop bracket (FT20511) on the driver side rear of the vehicle. Drill and install the 5/16" sheet metal bolt to lock the part in place. Use a 5/16" bolt, nut and washers to attach the brake cable to the Fabtech bracket. **SEE FIGURE 52**



54. Install the new Fabtech shocks with the factory hardware. On Performance and Stealth shocks use one 9/16" washer per side on both upper and lower mounts torque to 100 ft-lbs.
55. Install tires and wheels and torque lug nuts to wheel manufacturer's specifications. Turn front tires left to right and check for appropriate tire clearance. **Note - Some oversized tires may require trimming of the front bumper & valance.**
56. Check front end alignment and set to factory specifications. Re-adjust headlights.
57. Recheck all bolts for proper torque.
58. Recheck brake hoses, ABS wires and suspension parts for proper tire clearance while turning tires fully left to right.
59. Check the fluid in the front and rear differential and fill if needed with factory specification differential oil. **Note - some differentials may expel fluid after filling and driving. This can be normal in resetting the fluid level with the new position of the differential/s.**
60. Install Driver Warning Decal. Complete product registration card and mail to Fabtech in order to receive future safety and technical bulletins on this suspension.

Vehicles that will receive oversized tires should check ball joints, uniballs and all steering components every 2500-5000 miles for wear and replace as required.

RE-TORQUE ALL NUTS, BOLTS AND LUGS AFTER 50 MILES AND PERIODICALLY THEREAFTER.