



INSTALLATION INSTRUCTIONS



**2009-13 FORD F150 4WD
SUPERCREW MODEL ONLY**

FTS22172 - 6" BASIC SYSTEM GEN II

FTS22175 - 6" PERFORMANCE SYSTEM GEN II

- PARTS LIST -

| FTS22172 | | COMPONENT BOX 1 - BASIC SYSTEM |
|----------|-----------|--------------------------------|
| 1 | FT30558BK | SHOCK SPACER (DRIVER) |
| 1 | FT30568BK | SHOCK SPACER (PASSENGER) |
| 1 | FT30377BK | SKID PLATE |
| 2 | FT30378 | DIFF DROP BRACKET UPPER |
| 1 | FT30570 | HARDWARE SUBASSEMBLY |
| 1 | FT30564 | DIFF DROP BRACKET CENTER |
| 1 | FT30585BK | PINION DIFF MOUNT |
| 1 | FT30566 | HARDWARE KIT |
| 1 | F30374D | SPINDLE (DRIVER) |
| 1 | F30374P | SPINDLE (PASSENGER) |

| FTS22175 | | COMPONENT BOX 1 - PERFORMANCE SYSTEM |
|----------|-----------|--------------------------------------|
| 1 | FT30377BK | SKID PLATE |
| 2 | FT30378 | DIFF DROP BRACKET UPPER |
| 1 | FT30570 | HARDWARE SUBASSEMBLY |
| 1 | FT30564 | DIFF DROP BRACKET CENTER |
| 1 | FT30585bk | PINION DIFF MOUNT CLEAR ZINC |
| 1 | FT30566 | HARDWARE KIT |
| 1 | F30374D | SPINDLE (DRIVER) |
| 1 | F30374P | SPINDLE (PASSENGER) |

| FTS22173 | | COMPONENT BOX 2 |
|----------|-----------|---------------------------|
| 1 | FT30062BK | SWAY BAR DROP (PASSENGER) |
| 1 | FT30063BK | SWAY BAR DROP (DRIVER) |
| 1 | FT30375BK | FRONT CROSSMEMBER 4WD |
| 1 | FT30557BK | REAR CROSSMEMBER 4WD |
| 1 | FT30571 | HARDWARE SUBASSEMBLY |
| 1 | FT30562 | HARDWARE KIT |
| 4 | FT737U | UBOLT |
| 2 | FTBK52 | LIFT BLOCK W/BUMPSTOP |

| FT30570 | | HARDWARE SUB-ASSEMBLY |
|---------|----------|----------------------------|
| 4 | FT1020 | BUSHING |
| 4 | FT107 | SLEEVE .630 X .501 X 1.480 |
| 2 | FT181 | SLEEVE .625 X .500 X 2.375 |
| 2 | FT20277 | OUTER TIE ROD |
| 1 | FT22172I | INSTRUCTIONS |
| 1 | FT295 | ALIGNMENT CAM KIT 09 F150 |
| 2 | FT70032 | REAR BRAKE LINE AXLE TAB |

| FT30562 - HARDWARE KIT | | LOCATION |
|------------------------|---------------------------------|--------------|
| 4 | 5/16 SAE WASHER G5 ZINC | |
| 2 | NUT 5/16-18 STOVER G5 Z1 | |
| 2 | 5/16-18 X 1 HEX BOLT G8 ZINC | BRAKE LINE |
| 8 | 7/16 SAE WASHER G5 ZINC | |
| 4 | 7/16-14 C-LOCK NUT ZINC | |
| 4 | 7/16-14 X 1-1/4 HEX BOLT G8 ZNC | SWAY BAR EXT |
| 22 | 1/2 SAE WASHER G5 ZINC | |
| 11 | 1/2-13 C-LOCK NUT ZINC | |
| 4 | 1/2-13 X 1-1/4 HEX BOLT G8 ZNC | SKID PLATE |
| 3 | 1/2-13 X 3-1/2 HEX BOLT G8 ZNC | DIFF MOUNT |
| 4 | 1/2-13 X 4 HEX BOLT G8 ZINC | DIFF MOUNT |
| 6 | 7/16-14 C-LOCK NUT ZINC | SHOCK EXT |
| 6 | 7/16 SAE WASHER G5 ZINC | |
| 2 | THREAD LOCKING COMPOUND 1 MIL | |

| FT30566 - HARDWARE KIT | | LOCATION |
|------------------------|--------------------------------|------------|
| 1 | 1/2-13 X 2-3/4 HEX BOLT G8 ZNC | DIFF MOUNT |
| 1 | 1/2-13 X 2 HEX BOLT G8 ZINC | DIFF MOUNT |
| 4 | 1/2 SAE WASHER G8 ZINC | DIFF MOUNT |
| 2 | 1/2-13 C-LOCK NUT ZINC | DIFF MOUNT |
| 3 | M10-1.5 X 45MM HEX BOLT G10.9 | DIFF MOUNT |
| 3 | 10MM SPLIT WASHER | DIFF MOUNT |
| 3 | M10 FLAT WASHER ZINC | DIFF MOUNT |
| 1 | 5/16-18 X 2-3/4 SHCS | DIFF MOUNT |
| 1 | 5/16 SAE WASHER G5 ZINC | DIFF MOUNT |
| 1 | 5/16-18 C-LOCK NUT ZINC | DIFF MOUNT |
| 6 | 7/16-14 C-LOCK NUT ZINC | SHOCK EXT |
| 6 | 7/16 SAE WASHER G5 ZINC | SHOCK EXT |

| FT30571 | | HARDWARE SUB-ASSEMBLY |
|---------|-----------|-------------------------------|
| 1 | FT30387 | BRAKE LINE BRACKET |
| 1 | FT70033 | PROPORTIONING VALVE EXT |
| 1 | FT916H | 9/16" UBOLT HARDWARE KIT |
| 1 | FTAS16 | DRIVER WARNING DECAL |
| 1 | FTLOCK | THREAD LOCKING COMPOUND 2 MIL |
| 1 | FTREGCARD | REGISTRATION CARD |

- TOOL LIST -

Required Tools (Not Included)

Floor Jack

Jack Stands

Assorted Metric and S.A.E sockets, and Allen wrenches

Die Grinder w/Cut-off Wheel

Torque Wrench

1-1/2" Barrel Sand Wheel

1/2" Barrel Sand Wheel



- 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.

Use the provided thread locking compound on all hardware.

Do not combine this suspension system with any other lift device or parts.

This suspension must be installed with Fabtech shock absorbers.

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

On EcoBoost 3.5L models, discard all air shields.

OEM Wheels and tires cannot be used after the installation of this kit. Larger tires cannot be installed on the OEM wheels.

Verify differential fluid is at manufacture's 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.

Recommend Tires and Wheels:

Use 325/65R18 tire w/ 18x9 wheels w/ 5" BS w/ minor trimming

Use 35/13.50R18 tire w/ 18x9 wheels w/ 5" BS w/ minor trimming

Use 35/13.50R20 tire w/ 20x9 wheels w/ 5" BS w/ minor trimming

Use 285/55R22 tire w/ 22x11 wheels w/ 5" 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. Remove and discard the factory splash guard under the differential.
3. Locate the sway bar end links and disconnect from the factory lower control arms, save the hardware. Locate the sway bar frame mounts and disconnect them from the frame, remove the sway bar from the truck. Save the hardware and sway bar.
4. Working from the driver side of the vehicle, disconnect the tie rod ends from the steering knuckle by striking the knuckle to dislodge the tie rod end. **SEE FIGURE 1**

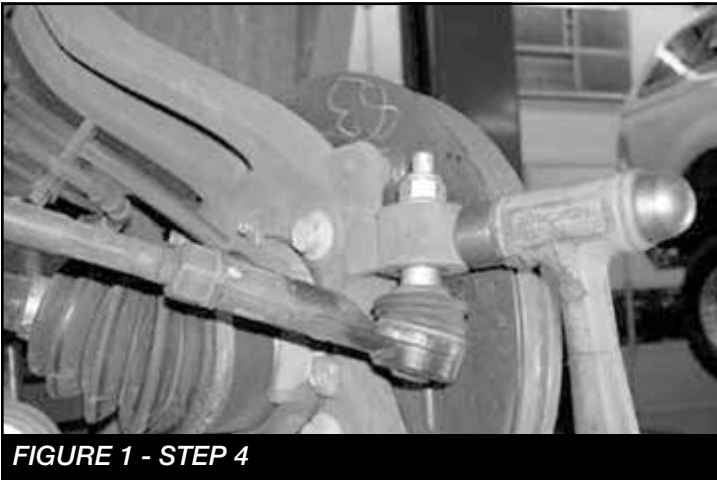


FIGURE 1 - STEP 4

5. Remove factory Tie Rod end and discard. **SEE FIGURE 2**



FIGURE 2 - STEP 5

6. Remove the brake caliper and place it next to the frame. Do not overstretch the brake hose when doing so. Retain the hardware for reinstallation. Remove the brake rotor and save. Disconnect the vacuum lines attached to the rear of the hub assembly. Allow the vacuum lines to hang freely. Remove the electronic stability control (ESC) sensor from the top of the hub. Cover the sensor to keep it free from dirt and debris. **SEE FIGURE 3**

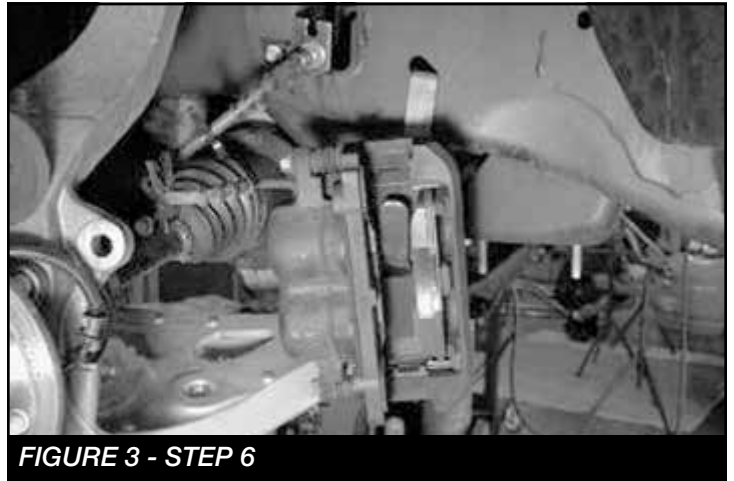


FIGURE 3 - STEP 6

7. Carefully remove the dust cap covering the hub assembly nut. Remove the C.V. bearing nut and save the nut and dust cap. **SEE FIGURE 4**

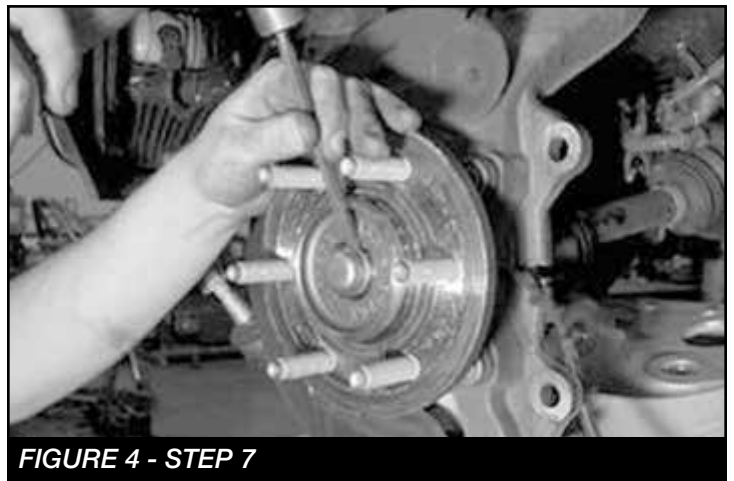


FIGURE 4 - STEP 7

8. 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 hardware and remove the knuckle with the dust shield and the hub. Use extra care not to over extend the C.V. axle shaft when removing the knuckle. **SEE FIGURE 5**



FIGURE 5 - STEP 8

9. Remove the four large bolts and three small bolts on the back side of the knuckle. Remove the hub and the actuator from the knuckle. Save hardware for install in the Fabtech knuckle.
10. Remove the bolts on the front side holding the dust shield. Remove the dust shield and discard the factory knuckle.
11. Locate the lower shock mount bolt and remove. Save the hardware. Locate the three upper nuts and remove. Save the hardware. Remove the shock assembly from the vehicle and mark "Driver" for assembly to install later with Fabtech shock extensions. **SEE FIGURE 6**

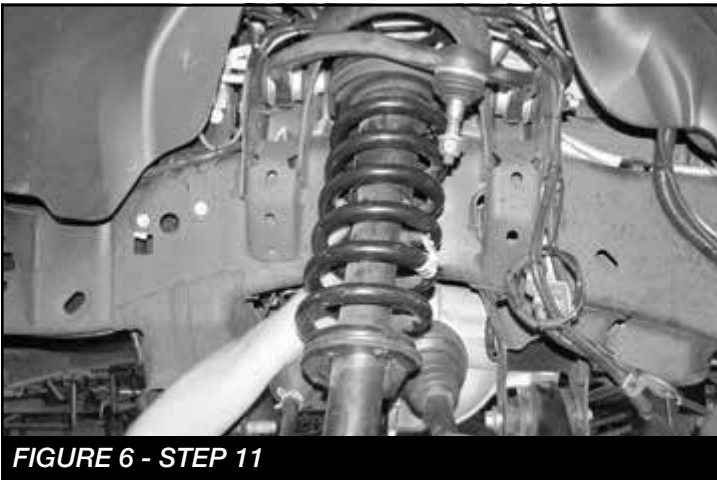


FIGURE 6 - STEP 11

12. Remove the lower control arm bolts from the frame pivots, disconnect upper sway bar nut and remove the lower control arm from the truck. Save hardware and lower control arm. **SEE FIGURE 7**



FIGURE 7 - STEP 12

13. Repeat steps 4 through 12 on the passenger side of the truck.
14. Remove the factory rear crossmember from the vehicle and discard the crossmember and hardware. **SEE FIGURE 8**

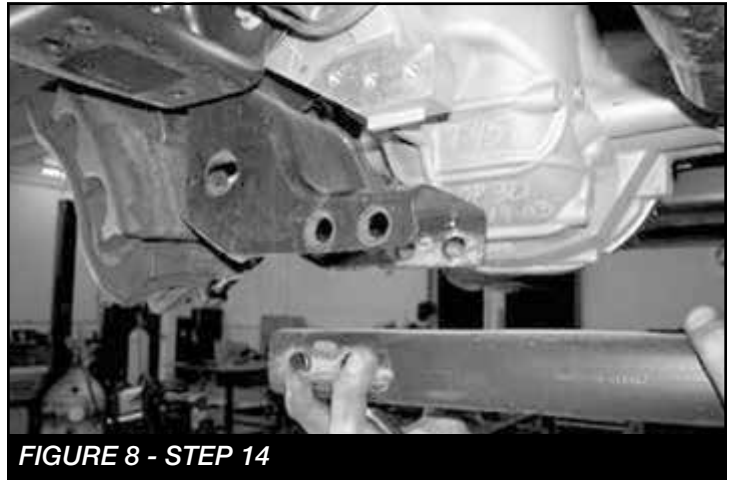


FIGURE 8 - STEP 14

15. Remove the front drive shaft bolts where they attach to the front differential. Support the end of the driveshaft before removing the front differential.

16. Remove the driver side rear differential mount hardware and discard. While supporting the differential, remove the two upper differential mount bolts and remove the differential and axles from the vehicle. Save the hardware. **SEE FIGURE 9**



FIGURE 9 - STEP 16

17. Locate rear differential mount closest to the pinion shaft. Mark the mount behind the bushing. Using a die grinder, remove the mount and discard. **SEE FIGURES 10-11**

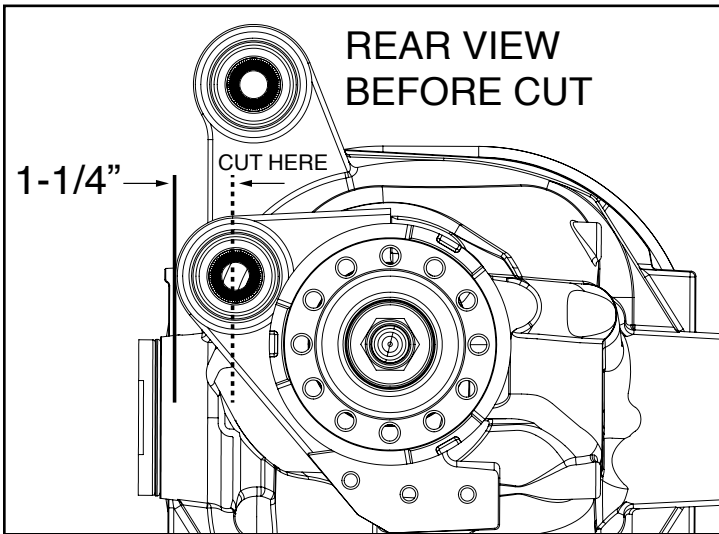


FIGURE 10 - STEP 17

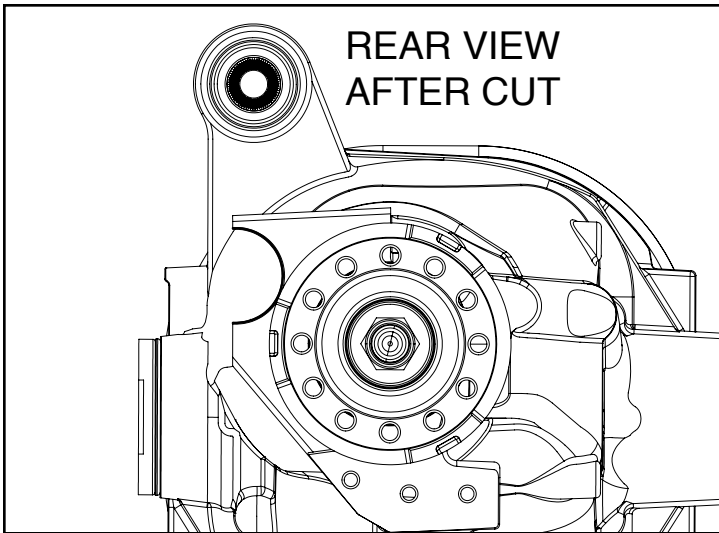


FIGURE 11 - STEP 17

18. Use a sander and remove all sharp edges and burs after the cut. **SEE FIGURE 12**



FIGURE 12 - STEP 18

19. Locate the driver side rear lower control arm pocket. Mark the frame 1-3/8" from the control arm pivot hole and 90 degrees to the bottom of the pocket where the cross member was mounted. Using a die grinder, cut all the way around the pocket. Discard removed portion of the pocket. **SEE FIGURES 13-15**

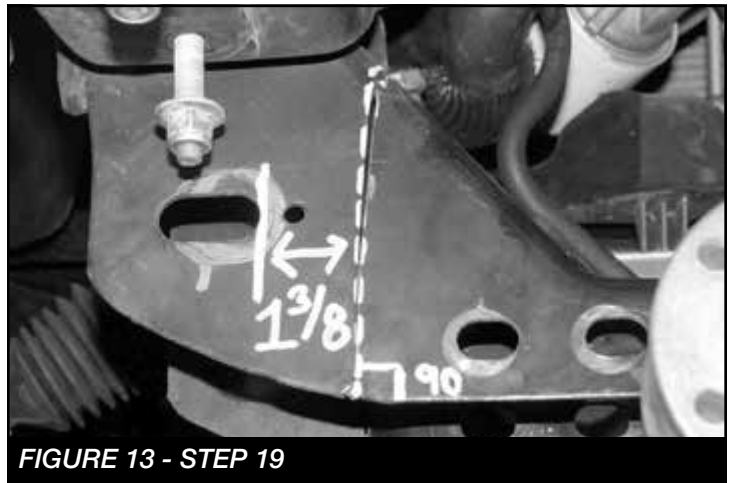


FIGURE 13 - STEP 19



FIGURE 14 - STEP 19

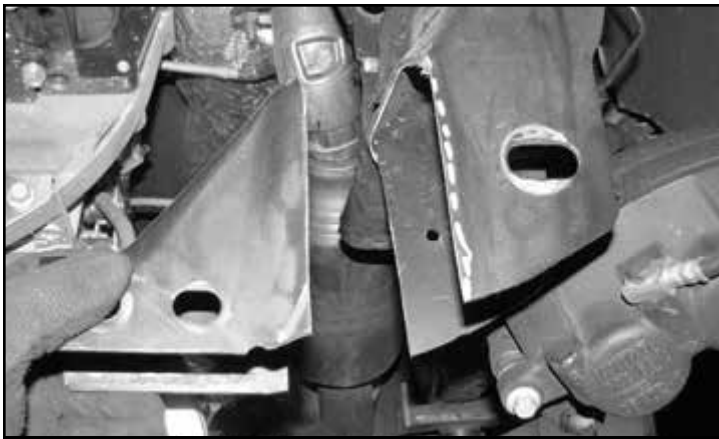


FIGURE 15 - STEP 19

20. Still working on the driver side rear lower control arm pocket, locate the tab on the pocket closest to the front of the vehicle. You will need to sand a radius in the front side of the pocket in order to clear the differential housing. **SEE FIGURE 16**



FIGURE 16 - STEP 20

21. Locate the two Fabtech upper differential mounts (FT30378). These upper differential mounts will be placed into the factory upper differential mounts using the factory upper differential mount hardware. Leave the hardware loose in preparation for the differential installation. **SEE FIGURES 17-18**



FIGURE 17 - STEP 21



FIGURE 18 - STEP 21

22. Locate the factory front differential and install into the Fabtech upper differential mounts using two 1/2"-13 x 4" hex cap bolts, washers and lock nuts. Leave all hardware loose in preparation of the installation of the remaining differential mounts. **SEE FIGURE 19**



FIGURE 19 - STEP 22

23. Locate the Fabtech rear crossmember (FT30376BK). Install the rear crossmember in the factory rear lower control arm pockets. Mount the crossmember using the factory control arm pivot hardware. Leave all hardware loose. All the tabs on the face of the crossmember should be pointed to the rear of the vehicle. **SEE FIGURE 20**



FIGURE 20 - STEP 23

24. Remove the center two differential housing bolts on the back side of the differential and the one on the bottom side. **SEE FIGURE 21**



FIGURE 21 - STEP 24

25. Locate the center differential bracket (FT30564). Install two of the Fabtech (FT1020) bushings and one sleeve (FT181) into the barrel on the differential bracket. **SEE FIGURE 22**



FIGURE 22 - STEP 25

26. Mount the differential bracket to the center of the differential using three M10-1.5 x 45mm bolts, lock washers, and flat washers. Mount the front tab on the diff to the center bracket using one 1/2-13 x 2" bolt, nut and washers. Leave loose at this time. **SEE FIGURES 23-25**



FIGURE 23 - STEP 26



FIGURE 24 - STEP 26



FIGURE 25 - STEP 26

27. Install a 1/2 -13 x 4" bolt washers and nut through the tabs on the rear crossmember and the bushing on the center bracket. Leave loose at this time. **SEE FIGURE 26-27**



FIGURE 26 - STEP 27



FIGURE 27 - STEP 27

28. Torque the M10-1.5 x 45mm bolts to 35 ft-lbs. Torque the 1/2-13 x 2" bolt to 90 ft-lbs.

29. Reinstall the front drive shaft with the factory hardware and torque to 35 ft-lbs. **SEE FIGURE 28**



FIGURE 28 - STEP 29

30. Locate the rear diff mount (Ft30585bk). Install two of the Fabtech (FT1020) bushings and one sleeve (FT181) into the barrel on the differential bracket. **SEE FIGURE 29**



FIGURE 29 - STEP 30

31. Install the rear diff bracket into the tabs on the rear crossmember using a 1/2-13x4" bolt, washers, and nut. **SEE FIGURE 30**



FIGURE 30 - STEP 31

32. Support the diff to make sure the block on the diff is centered with the hole in the rear bracket. **SEE FIGURE 31-32**

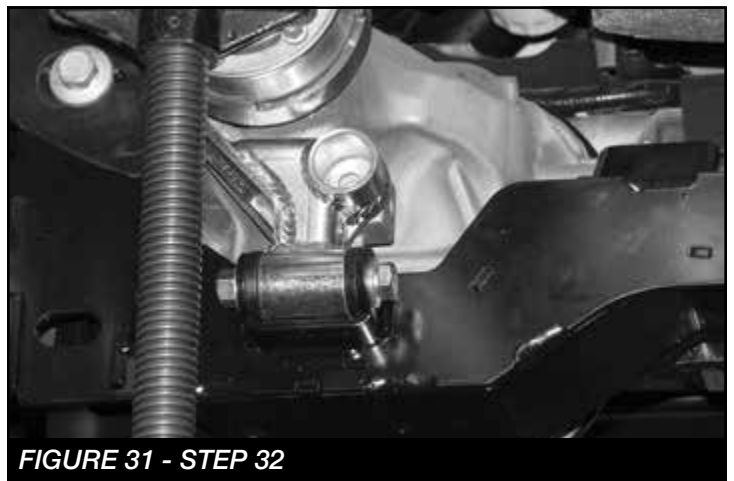


FIGURE 31 - STEP 32

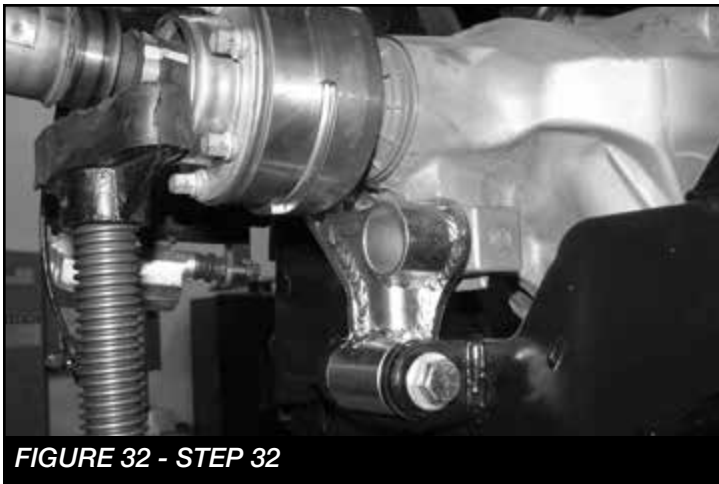


FIGURE 32 - STEP 32

33. Use the rear bracket as a drill guide to drill a 1/2" hole through the block on the rear of the diff. **SEE FIGURE 33**

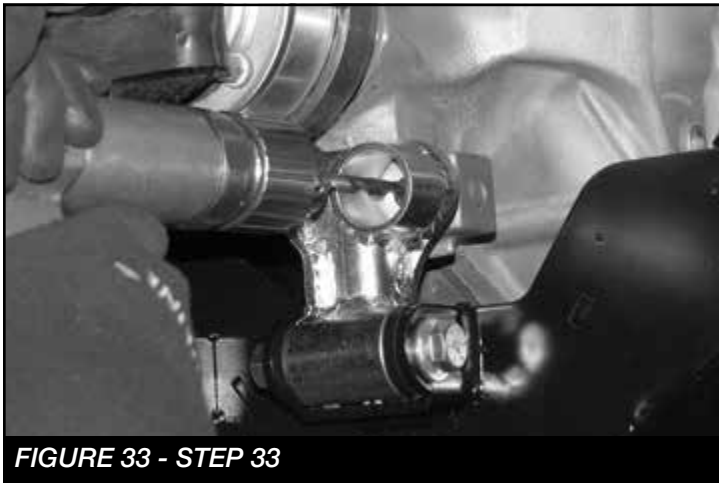


FIGURE 33 - STEP 33

34. Install a 1/2-13x2 bolt, washers and nut through the bracket and diff. Torque the bolt in the diff to 90 ft-lbs and the bolt in the crossmember to 90 ft-lbs. **SEE FIGURE 34**



FIGURE 34 - STEP 34

35. At this time locate upper differential brackets and torque the factory upper bolts to 90 ft-lbs and lower 1/2" bolts 127 ft-lbs. Locate the center diff mount on the cross member and torque the 1/2-13 x 4" bolt to 90 ft-lbs.

36. Reinstall the factory vent hose back on to the differential.

37. Locate the Fabtech front crossmember (FT30375BK). Install the front crossmember into the factory front control arm pockets using the factory hardware. Make sure the skid plate tab on the crossmember is facing the Fabtech rear crossmember. Leave the hardware loose at this time. **SEE FIGURE 35**



FIGURE 35 - STEP 37

38. Locate the Alignment cam kit (FT295). Locate the factory control arms. Install the lower control arms into the Fabtech crossmembers using the hardware in the cam kit (FT295). Torque the cam bolts at 200 ft-lbs after alignment. **SEE FIGURE 36**

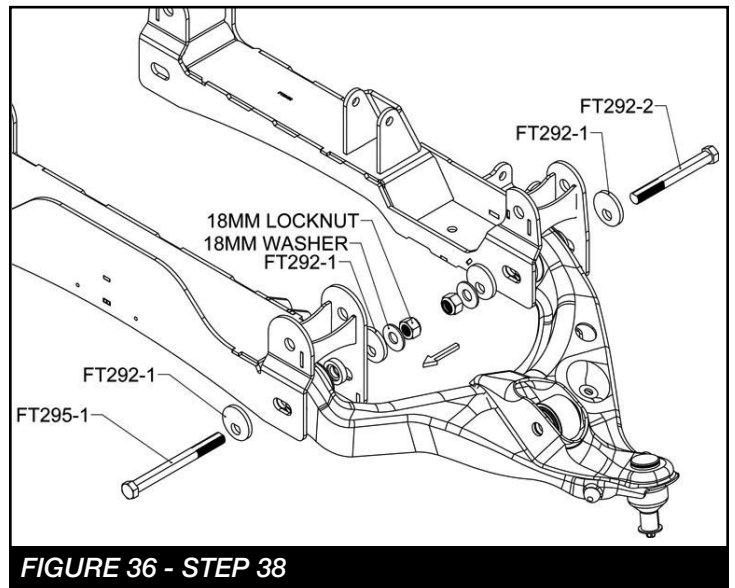


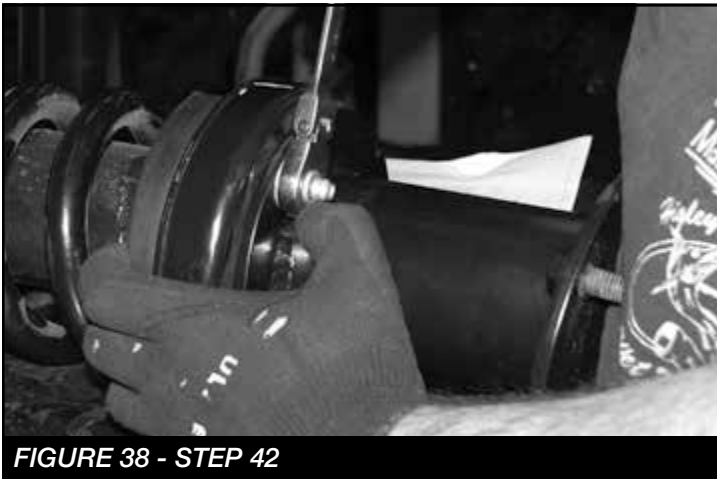
FIGURE 36 - STEP 38

39. Locate the Fabtech skid plate (FT30377BK) the skid plate will span the distance between the front and rear crossmembers directly under the front differential. Attach the end of the skid plate with the single hole to the tab on the back side of the front crossmember using one ½" - 13 x 1-1/4 bolt, washers and a C-lock nut. Lift up the back side of the skid plate and install it to the rear crossmember using two ½" - 13 x 1-1/4 bolts, washers and a C-lock nut. Torque all hardware to 127 ft-lbs. Torque crossmember bolts to 240 ft-lbs. **SEE FIGURE 37 If installing Dirt Logic coilovers (FTS221341) do so at this time, using the instructions provided in the shock box. Once finished, you may skip to STEP 46.**



If using the factory coilover continue to STEP 43.

40. Locate the FT30558BK DRVR and FT30568BK PASS shock spacers.
41. Locate the factory coilovers.
42. Install the Driver side spacer on the driver side coilover using the factory hardware and torque to 35 ft-lbs. Repeat on the passenger side. **SEE FIGURE 38**



43. Install the coil over into the frame bucket. Rotate lower mount inline with the control arm tabs, and the pivot at the control arm using the factory hardware. Torque the upper nuts to 35 ft-lbs and the lower pivot to 100 ft-lbs.

44. NOTE: Specific IWE "Integrated Wheel End" installation procedures are necessary when servicing and/or IWE vacuum is released. When the IWE actuator is loosened at the knuckle and/or removed from CV shaft:

- Remove the two vacuum line, compress the IWE actuator and install a vacuum cap on the larger vacuum port (to keep it compressed).
- Install the IWE actuator onto the halfshaft outer end (if removed).
- Do not dislodge the IWE seal spring when installing an IWE on a CV halfshaft outboard end or component damage may occur.
- Allow the wheel knuckle to swing outward while keeping the halfshaft pushed inward.
- Once clearance is available, install the halfshaft outboard end into the wheel knuckle hub bearing.
- Connect the upper ball joint and install new nut; torque to 85 ft-lbs.
- Install the three IWE actuator to wheel knuckle retaining bolts; torque to 106 ft-lbs
- Remove the IWE vacuum cap and reconnect the vacuum tubes.
- Verify the spline engagement by checking for spline lash before installing the axle nut or component damage may occur.
- Install new axle nut; 30 ft-lbs

45. Locate the Fabtech driver side spindle (FTS30374D) and install the factory hub. Torque the four 14mm bolts to 160 ft- lbs. **SEE FIGURES 39-40**

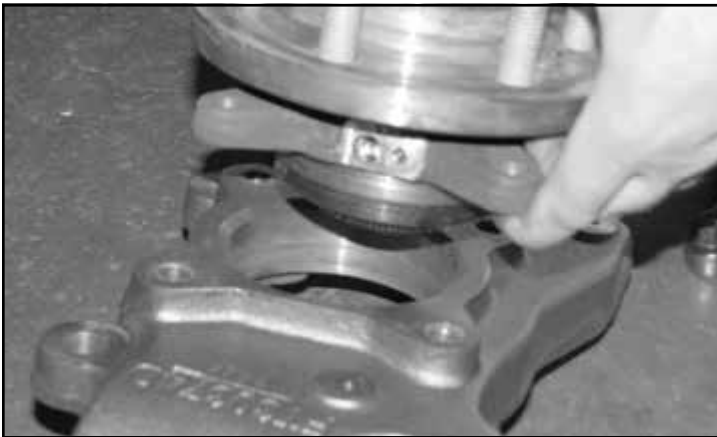


FIGURE 39 - STEP 45

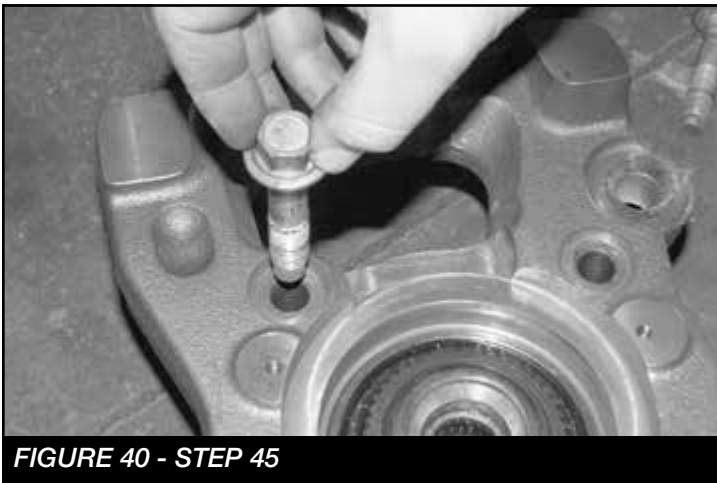


FIGURE 40 - STEP 45

46. Locate the factory 4WD actuator and install into the Fabtech spindle. Torque the factory 8mm bolts to 17 ft-lbs. **SEE FIGURE 41**



FIGURE 41 - STEP 46

47. Install the Fabtech knuckle onto the upper and lower control arms. Torque the upper ball joint to 85 ft-lbs and the lower ball joint to 110 ft-lbs. **SEE FIGURE 42**

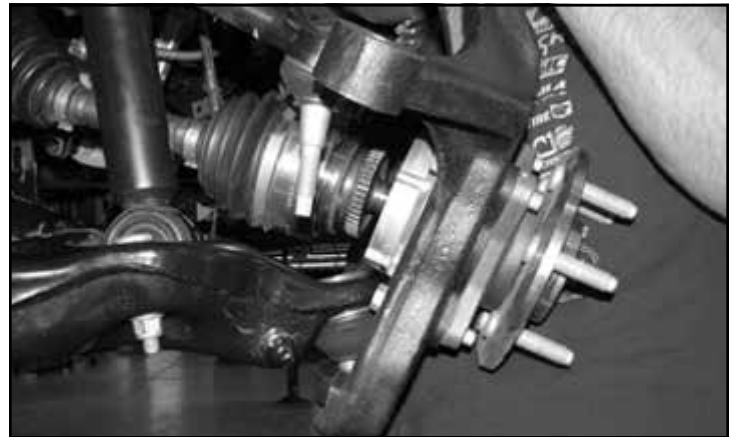


FIGURE 42 - STEP 47

48. Install the dust shield and torque to 14 ft-lbs. Install CV shaft nut and torque to 35 ft-lbs. Install the factory dust cover. **SEE FIGURE 43**



FIGURE 43 - STEP 48

49. Install the ABS wheel speed sensor. Make sure the end of the sensor is clean. **SEE FIGURE 44**



FIGURE 44 - STEP 49

50. Carefully pull some slack from the frame side and reconnect the vacuum line to the hub assembly. Install the Fabtech frame brake line bracket (FT70032). Using the factory hardware, mount factory brake line bracket to the side of the Fabtech knuckle. After installing the factory brake line bracket, check to insure full movement by steering the knuckle back and forth, and make sure none of the ABS lines, brake lines, or vacuum lines are inhibited during full test movement of the knuckle.

SEE FIGURES 45-46



FIGURE 45 - STEP 50

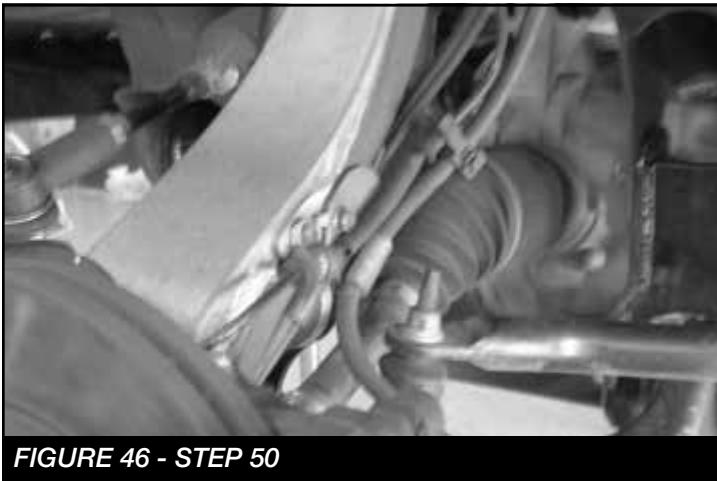


FIGURE 46 - STEP 50

51. Reinstall the original brake rotor, followed by the brake caliper. Use a small amount of the supplied thread lock compound on the caliper bolts and torque to 145 ft-lbs.

SEE FIGURE 47



FIGURE 47 - STEP 51

52. Locate the factory tie rod. Trim 1" off the end.

SEE FIGURES 48-49

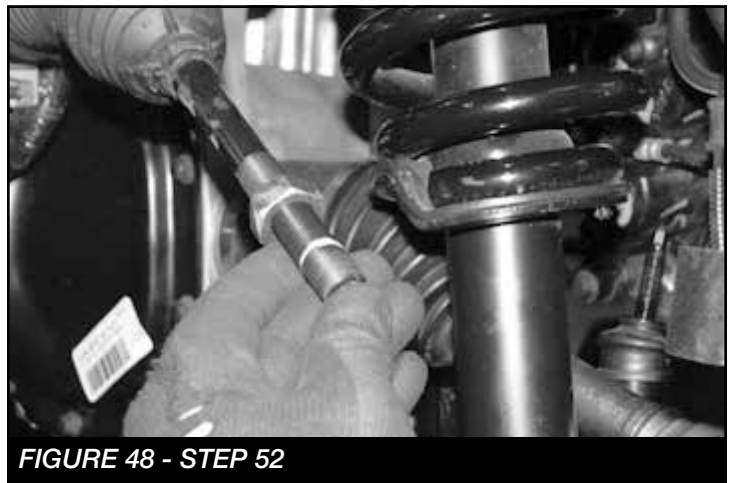


FIGURE 48 - STEP 52



FIGURE 49 - STEP 52

53. Locate the Fabtech tie rod end (FT20277). Install the tie rod end on the tie rod. Torque to 60 ft-lbs.
SEE FIGURE 50



FIGURE 50 - STEP 53

54. Reconnect the tie rod end to the steering knuckle and torque to 60 ft-lbs. **SEE FIGURE 51**



FIGURE 51 - STEP 54

55. Install the factory sway bar to the frame using the FT30063BK driver side bracket and the FT30062BK passenger side bracket. **SEE FIGURES 52-53**



FIGURE 52 - STEP 55



FIGURE 53 - STEP 55

56. Install the sway bar end to the factory lower control arm using the factory end links. **SEE FIGURE 54**



FIGURE 54 - STEP 56

REAR SUSPENSION

57. Jack up the rear end of the vehicle and support the frame rails with jack stands. Release the parking brake at this time. Supporting the rear differential, remove the rear shocks, u-bolts, blocks and lower axle down. Use care not to over extend the brake hose.

58. Locate the factory brake line mount on the driver side of the frame. Locate the supplied brake line bracket (FT70033) and attach the bracket between the factory frame mount and the factory brake line. **SEE FIGURE 55**



FIGURE 55 - STEP 58

59. Locate and install the rear lift blocks FTBK52. The extended bump stop perch will be facing inboard of the truck. Using the provided u-bolts, nuts and washers, align the axle, lift blocks, and springs and torque u-bolts to 90 ft-lbs. **SEE FIGURE 56**



FIGURE 56 - STEP 59

60. Locate FTS7266 rear shocks (not included with kit). Install the supplied shock sleeves from bag 143002 into each end of the shocks. Install the shocks using the factory hardware and torque upper and lower bolts to 45 ft-lbs.

61. Locate E-brake bracket (FT30387) and mount to the factory E-brake cable mount and reinstall the E-brake cable into the Fabtech bracket. **SEE FIGURES 57-59**

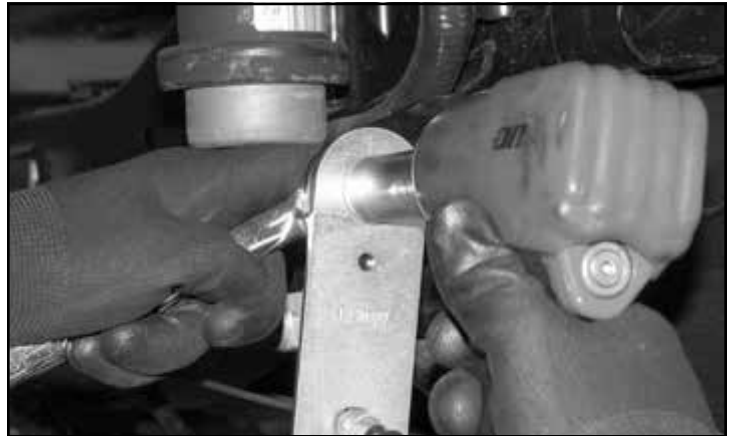


FIGURE 57 - STEP 61



FIGURE 58 - STEP 61



FIGURE 59 - STEP 61

62. 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.**
63. Check front end alignment and set to factory specifications. Readjust headlights.
64. Recheck all bolts for proper torque.
65. Recheck brake hoses, ABS wires and suspension parts for proper tire clearance while turning tires fully left to right.
66. 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.**
67. 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 and all steering components every 2500-5000 miles for wear and replace as required.

**RETORQUE ALL NUTS, BOLTS AND LUGS
AFTER 50 MILES AND PERIODICALLY
THEREAFTER.**