



Installation Instructions



6" Performance Suspension System

04-08 Ford F 150 4WD



6" 04-08 Ford F150 4WD
FTS22016BK / FTS22017BK / FTS22135BK

TOOL LIST: (NOT INCLUDED)

- FLOOR JACK & JACK STANDS
- ASSORTED METRIC AND S.A.E SOCKETS & WRENCHES
- TORQUE WRENCH
- DIE GRINDER WITH CUT OFF WHEEL AND GRINDING WHEEL

THE FACTORY FRONT DRIVE SHAFT WILL NEED TO BE REBALANCED WITH THE INSTALLATION OF THIS KIT.

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

CHECK ALL PARTS INCLUDED IN THIS KIT TO THE PARTS LIST ABOVE BEFORE BEGINNING INSTALLATION OF THIS KIT.

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

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

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

THIS SYSTEM MUST BE INSTALLED WITH FABTECH SHOCK ASBORBERS TO PREVENT POSSIBLE BALL JOINT & CV DAMAGE.

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

O.E.M. WHEELS & TIRES CAN BE REINSTALLED WITH THIS KIT. A LARGER TIRE CANNOT BE INSTALLED ON THE O.E.M WHEEL. FABTECH RECOMMEND'S A 17X8 WHEEL WITH A 5" BACK SPACING WITH A 315/70R17 TIRE.

VERIFY DIFFERENTIAL FLUID IS AT MANUFACTURES RECOMMENDED LEVEL PRIOR TO KIT INSTALLATION. INSTALLATION OF THE KIT WILL RE-POSITION 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.

FRONT SUSPENSION INSTRUCTIONS:

1. Disconnect the negative terminal on the battery. With the vehicle on level ground, set the emergency brake and block the rear tires. Jack up the front end of the truck and support the frame rails with jack stands. **NEVER WORK UNDER AN UNSUPPORTED VEHICLE!** Remove the front tires.
2. Remove and discard the factory splash guard under the differential. Remove and save the optional factory transfer case skid plate.
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. Use care not to damage the tie rod end when removing. Save the hardware. SEE PHOTO BELOW.

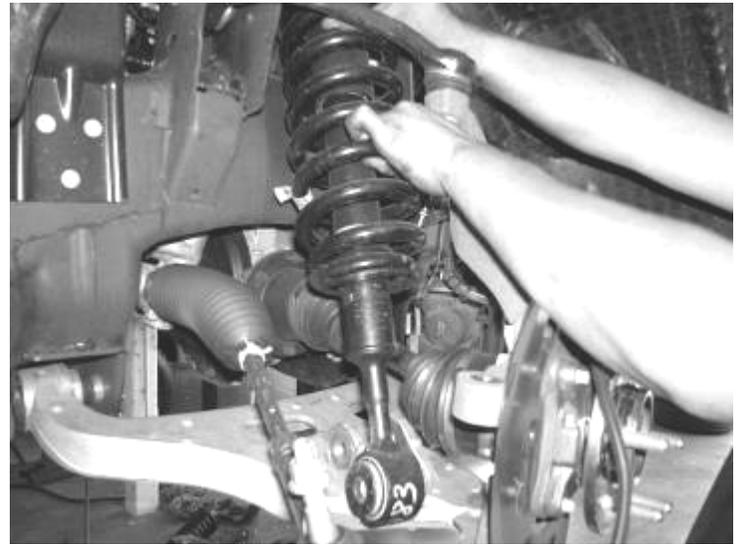


5. Remove the brake caliper and place it next to the frame. Do not overstretch the brake hose when doing so. Retain the hardware for reinstallation. Remove the brake rotor and save. Disconnect the vacuum lines attached to the rear of the hub assembly. Allow the vacuum lines to hang freely. Unplug the ABS wire at the plug behind the inner fender well and remove all the ABS line clamps. SEE PHOTO IN NEXT COLUMN.

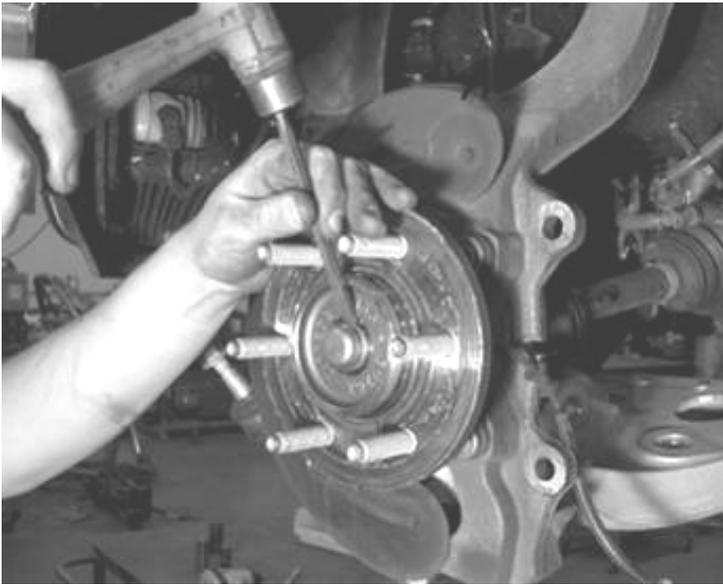


Brake Caliper Shown Hung from Frame

6. 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 truck and set aside for assembly later. SEE PHOTO BELOW.



7. Carefully remove the dust cap covering the hub assembly nut. Remove the C.V. bearing nut and save the nut and dust cap. Remove the bolts attaching the C.V. half shaft to the front differential, then remove the C.V. shaft from the truck. Save C.V. shaft and discard the C.V. bolts. SEE PHOTO ON NEXT PAGE.



8. Remove the factory C.V. flange from the rear of the steering knuckle and save all the hardware. Remove the hub assembly from the steering knuckle along with the ABS sensor still attached and save all of the hardware. **USE CARE NOT TO DAMAGE THE RUBBER O-RING ON THE HUB ASSEMBLY. DO NOT DISCONNECT THE ABS SENSOR FROM THE HUB BEARING.**

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



10. Remove the lower control arm bolts from the frame pivots and remove the lower control arm from the truck. Save hardware and lower control arm.

11. Repeat steps four through ten on the passenger side of the truck.

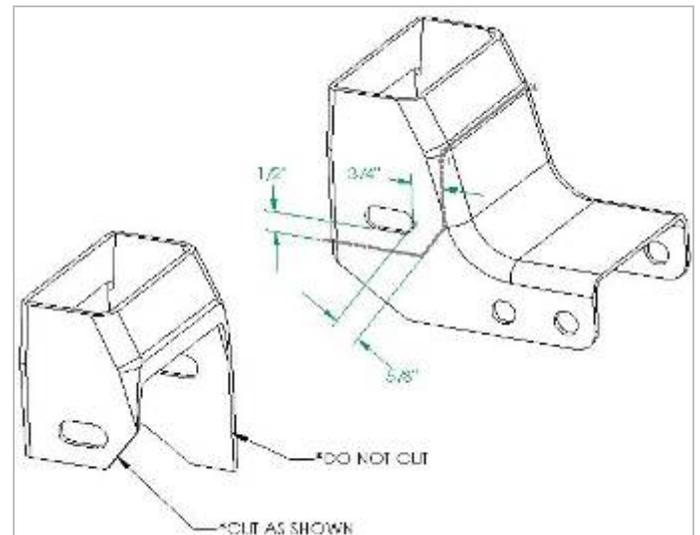
12. Remove the heat shield from around the front drive shaft at the transfer case and save the hardware and shield. Remove the front drive shaft from the truck and save drive shaft and the hardware. **Set the drive shaft aside, you will need to re-index it later in the install.**

13. Remove the factory rear crossmember from the truck and discard the crossmember and hardware. SEE PHOTO BELOW.



14. 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 from the truck. Save the hardware.

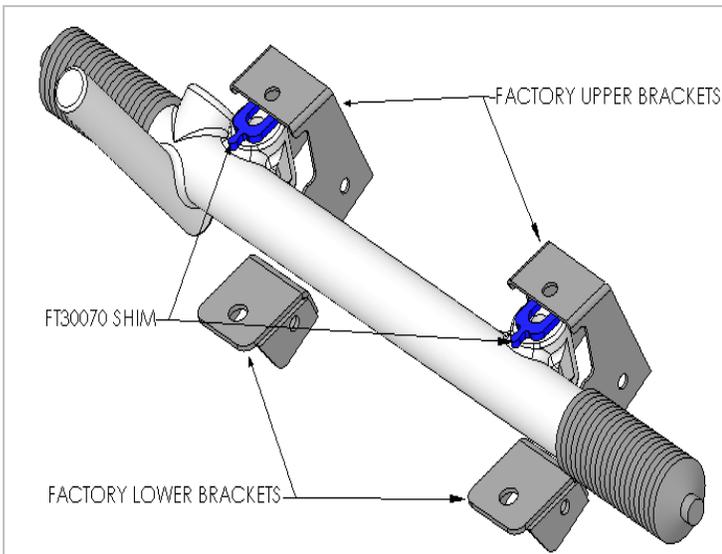
15. Locate the driver side rear lower control arm pocket. Following the diagram below mark and cut the frame using a die grinder with a cut off wheel. **NOTE- YOU WILL ONLY BE CUTTING THE REAR AND TOP PORTIONS OF THE POCKET, DO NOT CUT THE FRONT SIDE OF THE POCKET. SEE DRAWING BELOW AND EXPLODED VIEW ON LAST PAGE.**



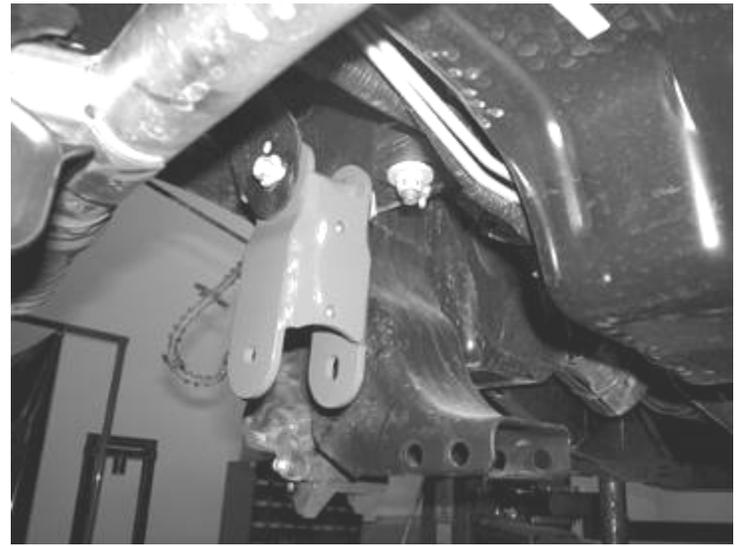
View from Driver Rear



16. Locate the 4 bolts attaching the Rack and Pinion assembly to the frame. Loosen all four bolts, **DO NOT REMOVE THEM**. Locate FT30070 rack shim and install between the Rack and Pinion assembly and the frame as shown below. Torque the four factory bolts to 75 ft. lbs. **SEE DRAWING BELOW.**

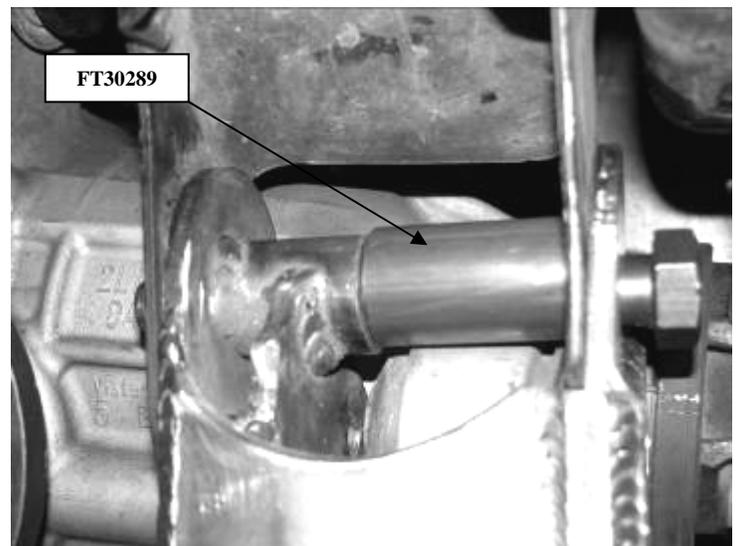


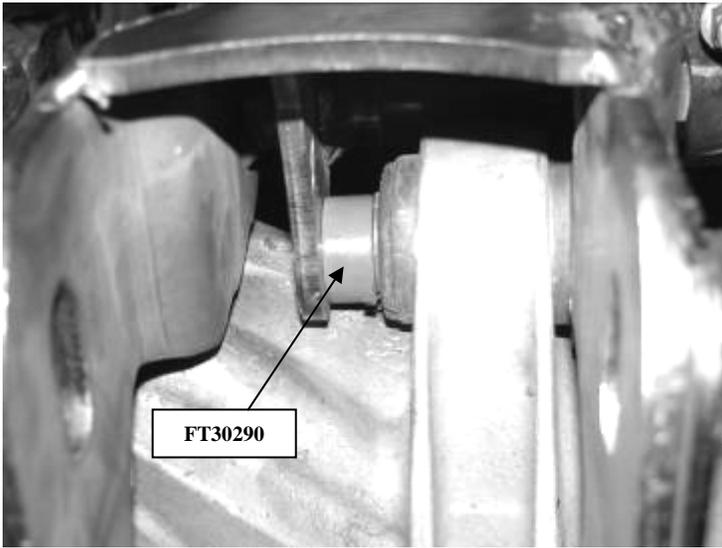
17. Locate the differential brackets FT30060 (both passenger and driver side brackets are the same). Attach the differential brackets to the frame using the original hardware, leave loose. When installing both differential brackets, make sure the two welded nuts on each bracket are facing inboard of the truck. **SEE PHOTO IN NEXT COLUMN**



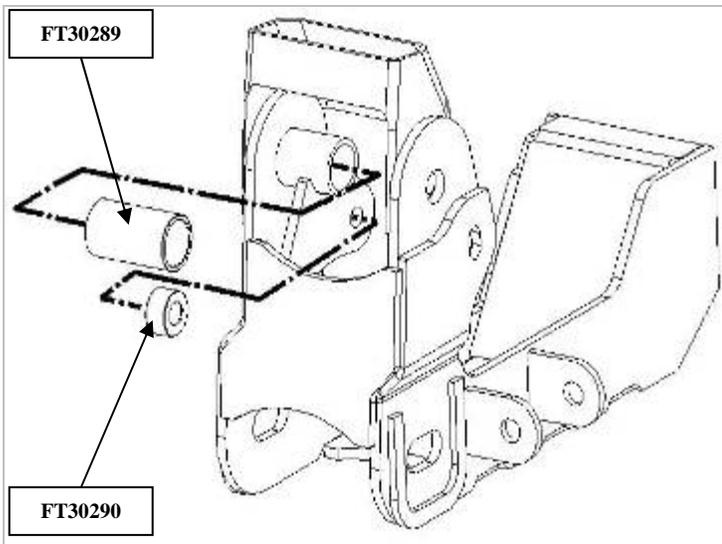
18. Reinstall the differential into the truck attaching the upper mounts using the supplied 7/16" x 4" bolt, c-lock, and washers on the passenger side and the supplied 7/16" x 3 1/2" bolt, c-lock, and washers on the driver side mount. Allow the differential to hang from the brackets. **NOTE: When installing the 7/16" bolts, make sure they are installed from the front to the rear of the truck.**

19. Locate the rear Fabtech crossmember FT30288 with the four tabs facing rearward and place the front of the crossmember inside of the stock lower control arm pocket with rear of the crossmember on the backside of the pocket. Locate FT30289 Rear Sleeve and attach using the supplied 18mm hardware on the driver's side. Use the factory crossmember bolt on the passenger side to attach the new crossmember to the lower control arm pocket. Leave loose. Locate and install FT30290 Diff. Spacer and use the supplied 7/16" x 4" bolt and flat washer along with the FT30073 differential nut tab, align the driver side rear differential mount to the crossmember and attach. Apply a small amount of the supplied thread lock compound to the differential nut tab before installing. Leave loose. **SEE PHOTOS BELOW.**

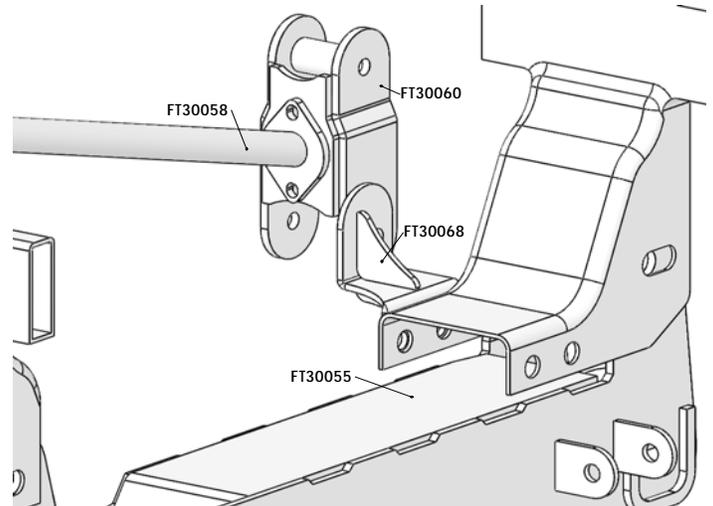




FT30073 Diff Nut Tab

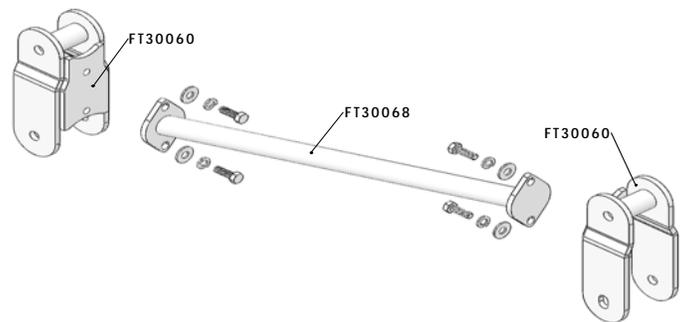


20. Locate FT30068 Passenger side differential support bracket. Attach the bracket first to the Fabtech differential bracket using the already installed 7/16 x 4" bolt. Then attach the lower two holes (where the factory rear crossmember was bolted) to the frame using the supplied 1/2" x 1 1/2" bolts, nuts, and washers. SEE DRAWING BELOW AND EXPLODED VIEW ON LAST PAGE

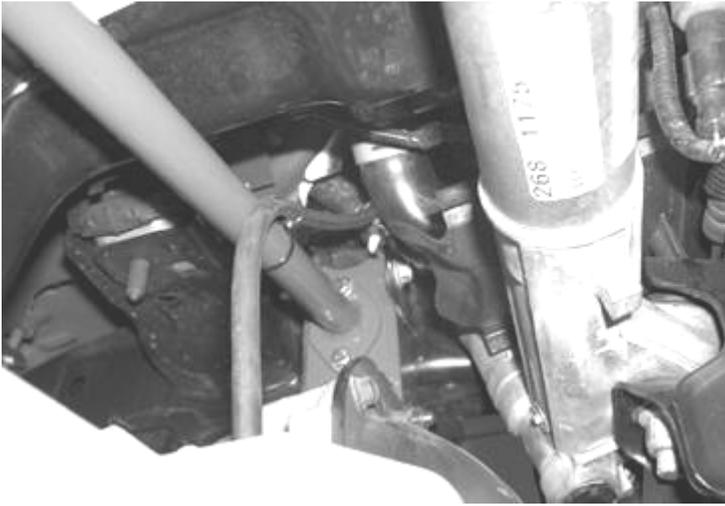


View from Passenger Side Rear Forward

21. Locate FT30058 Differential Bracket Cross Tube. Using the supplied 5/16" x 1 1/4" bolt, flat washer, and split washer attach the cross tube to the two upper differential brackets. Use the supplied thread lock compound on all cross tube hardware. Torque to 15 FT LBS. SEE DRAWING BELOW.



22. Locate the differential vent line. Remove the lower half of the differential vent line and discard. Using the supplied FT30075 diff vent line reattach to the upper half of the factory vent line, then connect to the differential itself. Using one of the supplied zip ties, secure the vent line to the differential cross tube. SEE PHOTO ON NEXT PAGE

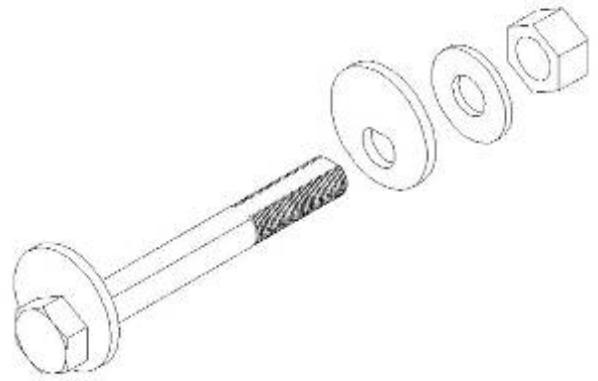


23. Locate the tabs on the rack and pinion frame mounts. Using a die grinder with a sanding disc, sand down both tabs 1/4". SEE PHOTO BELOW.



24. Locate the front Fabtech crossmember FT30054. With the one tab facing rearward, install the crossmember into the stock front lower control arm pockets, and attach using the original hardware. Leave loose.

25. Locate the supplied FT292 Alignment cam kits supplied with the kit. Using the supplied alignment cams, attach the lower control arms to the Fabtech crossmembers. SEE DRAWING IN NEXT COLUMN FOR ALIGNMENT CAM INSTALLATION. WHEN INSTALLING THE ALIGNMENT CAMS THE NUTS SHOULD BE ON THE INSIDE OF THE CROSSMEMBERS.

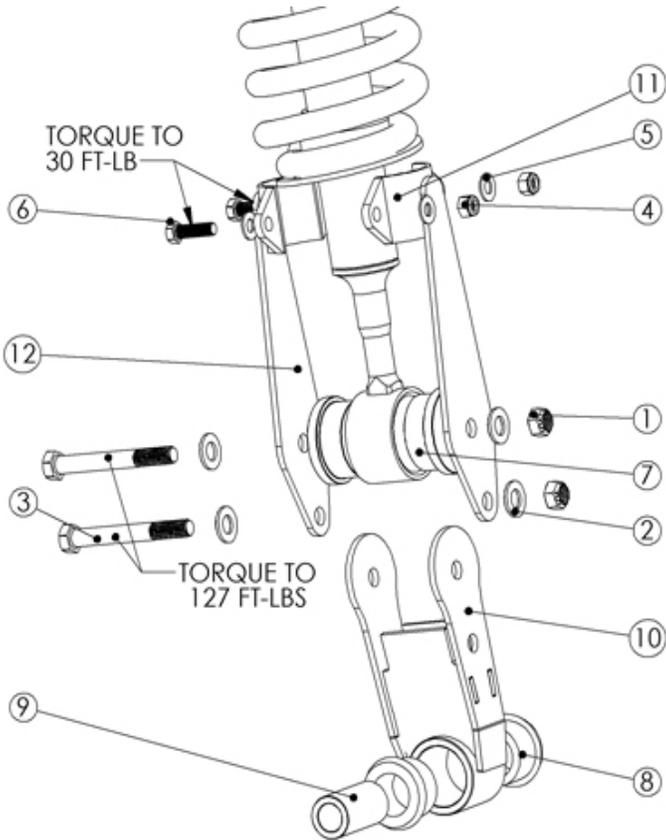


26. Locate FT30069 Skid Plate. Using the supplied 7/16" X 1 1/2" bolts, nuts, and washers attach the skid plate to the crossmembers.

27. Torque all differential bolts to 85 FT LBS. Torque the factory lower control arm bolts to 150 FT LBS. Torque Skid Plate bolts to 55 FT LBS.

28. Locate the previously removed factory front shock assembly. Locate the Fabtech shock extensions and hardware - (FT30416BK) upper, (FT30417BK) upper, (FT30418BK) lower, (FT30386) Aluminum Bushing, (FT1036) Busing Half, and (FT99) Sleeve. Install all these parts using the drawing below. All quantities shown below are per shock. SEE TEXT AND DRAWING BELOW.

ITEM NO.	DESCRIPTION	QTY.
1	NUT 1/2-13 CRIMP LOCK	2
2	WASHER 1/2 SAE	4
3	BOLT 1/2-13 X 4	2
4	NUT 3/8-16 NYLOK	2
5	WASHER 3/8 SAE	4
6	BOLT 3/8-16 x 1 1/4	2
7	FT30386 ALUMINUM BUSHING	2
8	FT1036 BUSHING HALF	2
9	FT99 SLEEVE 1.250 X .813 X 2.350	1
10	FT30418BK EXT. LOWER	1
11	FT30416BK EXT UPPER	1
12	FT30417BK EXT UPPER	1

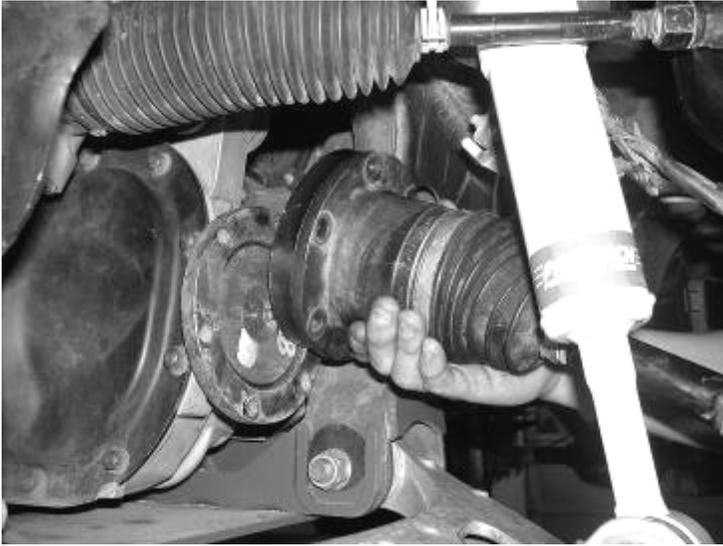


29. Working from the driver side of the truck, locate the previously assembled shock assembly and install it into the truck using the original factory hardware. Install the lower bolt first, then the upper three bolts. Torque the 3 upper nuts to 35 FT LBS. and the one lower bolt to 110 FT LBS. SEE PHOTO BELOW

30. Locate the FTS30100D steering knuckle. Attach the steering knuckle to the lower ball joint first, then attach the upper ball joint to the steering knuckle. Torque lower ball joint nut to 110 FT LBS. Torque upper ball joint to 85 FT LBS.

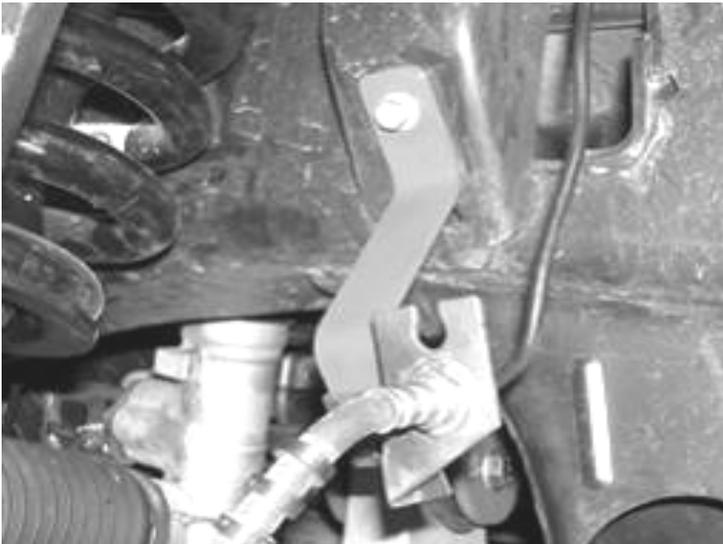
31. Reinstall the factory hub assembly and C.V. flange into the new Fabtech spindle. Torque the 4 hub bolts to 60 FT. LBS. and the 3 C.V. flange bolts to 11 FT. LBS. Use the supplied thread lock compound on all the hub assembly bolts. Route the ABS wire through the slot cut in the steering knuckle, making sure the grommet on the ABS wire is pressed firmly into the slot.

32. Locate the factory CV half shaft and slide it into the factory hub assembly from the backside of the steering knuckle. Attach the CV shaft to the hub assembly using the original factory nut, torque to 20 ft lbs. Reinstall the factory dust cap over the CV bearing nut. Locate the supplied FT30018 CV spacer. Place the CV spacer between the differential housing drive flange and the CV axle assembly. Using 12mm x 1.75 x 45mm bolts, washers, and thread lock compound attach CV axle and spacer to flange and torque to 60 ft lbs in a cross pattern.



There are two possible brake line bracket set up's on the F150's, determine which your model has and follow the proper step below 34 or 35.

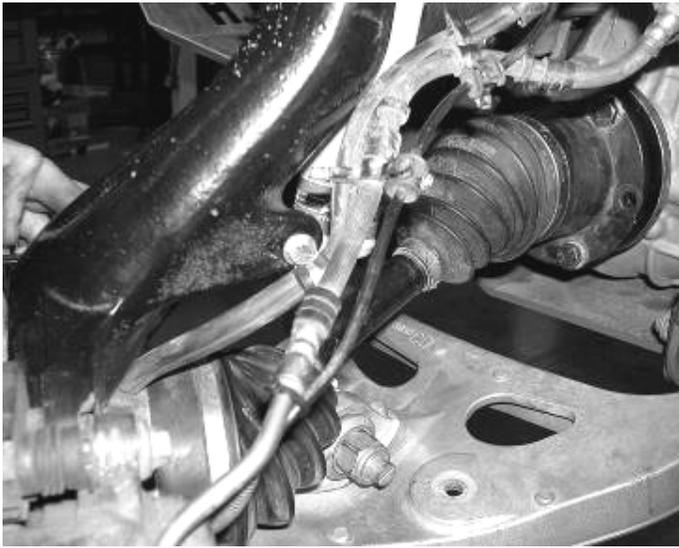
33. Locate the factory brake line bracket on the frame. Disconnect the bracket from the frame and save the hardware. Carefully pull the brake line down from the frame approximately 4". Locate the new FT30065 brake line bracket and attach to the frame using the original factory bolt, attach the factory brake line bracket to the new Fabtech bracket using the supplied 5/16" x 1" nut, bolt, and washers. SEE PHOTO BELOW.



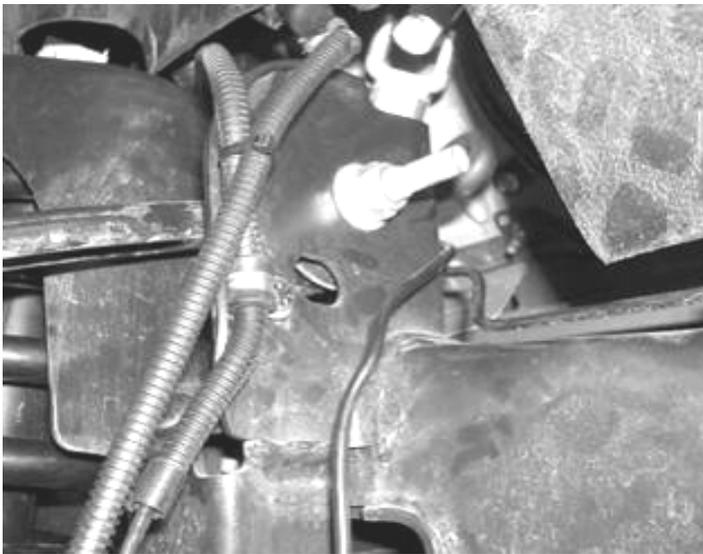
33. Locate the factory brake line bracket on the frame. Disconnect the bracket from the frame and discard the hardware. Carefully pull the brake line down from the frame approximately 5". Locate the new FT30249 brake line bracket and attach to the frame using the supplied 5/16" x 1" bolts, attach the factory brake line bracket to the new Fabtech bracket using the supplied 5/16" x 1" nut, bolt, and washers. SEE PHOTO BELOW AND IN NEXT COLUMN

34. 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.

35. Locate the hub assembly vacuum line, remove the factory vacuum line clamp on the rear upper control arm pocket and the two line clamps on top of the coil mount. Carefully pull some slack from the frame and reconnect the vacuum line to the hub assembly. Using the supplied Adel clamps and 1/4" x 1" bolt, nut, and washer secure the vacuum line first to the tab on the rear of the knuckle then to the factory hole on the side of the rear upper control arm pocket using the supplied 1/4" x 3/4" bolt, nut, and washers. Attach the ABS line to the brake line using the factory line clamps on the brake line. Using the supplied zip ties, secure the ABS wire to the vacuum line. SEE PHOTOS BELOW AND ON NEXT PAGE.

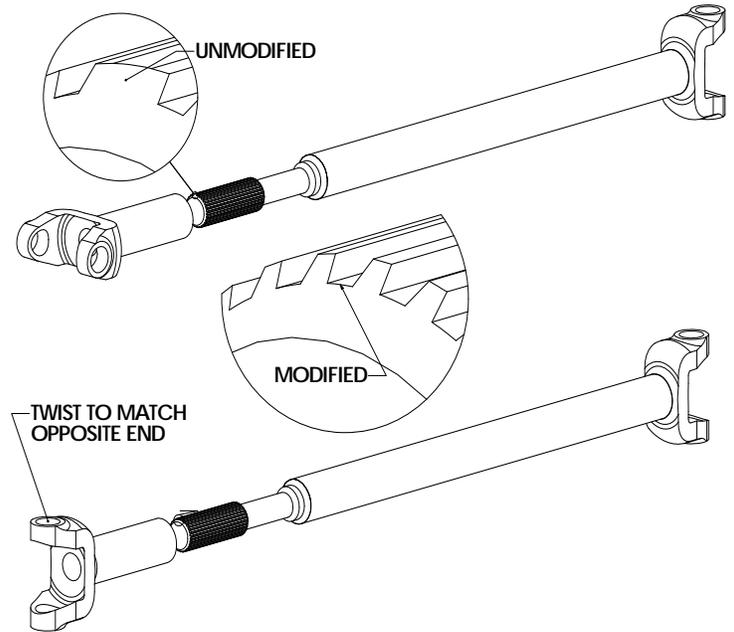


Vacuum Line & ABS & Brake Line Routing

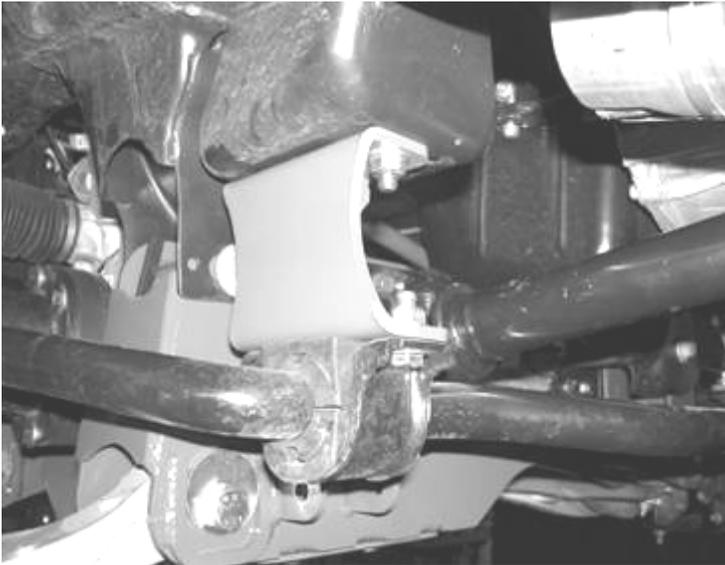


Rear Upper Control Arm Pocket View

36. Reconnect the tie rod end to the steering knuckle and torque to 110 ft. lbs.
37. Repeat steps thirty through thirty-eight on the passenger side of the truck.
38. Locate the previously removed front drive shaft. Carefully remove the metal tie strap from the drive shaft boot. Discard the tie strap. Pull the slip yoke free from the drive shaft. On the splines of the drive shaft locate the master key spline. Using a die grinder, carefully grind the master key completely away. Clean all metal shavings and debris from drive shaft splines and grease with heavy-duty chaste grease. Reattach the slip yoke to the drive shaft carefully aligning both ends so the yokes are in the same position. Using the supplied FT30076 drive shaft boot clamp, reattach the drive shaft boot to the drive shaft. **THE DRIVESHAFT WILL NOW NEED TO BE REBALANCED BY A PROFESSIONAL DRIVE LINE SHOP. SEE DRAWING IN NEXT COLUMN AND EXPLODED VIEW ON LAST PAGE**



39. Reinstall the drive shaft back into the truck in the factory position **with the slip yoke at the transfer case** and torque all drive shaft bolts to 83 ft lbs. Reinstall the factory dust shield using the original factory hardware. Reinstall the factory transfer case skid plate using the original hardware.
40. Locate the impact struts FT20599BK and install the provided FT1044 bushings. Attach the struts to the rear crossmember tabs and to the rear mounts FT30064BK using 7/16" x 3-1/2" bolts, nuts, and washers. Leave loose.
41. Swing the strut tube up with the rear mount bracket attached to meet the transmission crossmember. The rear bracket will be placed on the bottom side of the transmission crossmember. With a center punch mark the hole and drill out to 1/2". Using the supplied 1/2" x 1 1/2" bolt, nut, and washers attach the bracket to the transmission crossmember. Torque the rear mount bracket to 40 ft lbs, and the 7/16" impact tube bolts to 45 ft lbs.
42. Locate the FT30062 (passenger) and FT30063 (driver) sway bar brackets. Using the factory bolts, nuts, and washers attach the sway bar brackets to the frame. Leave loose. Locate the factory sway bar and attach the factory sway bar to the new bracket using the supplied 7/16" x 1 1/4" bolts, nuts, and washer. Attach the sway bar end links to the factory lower control arm. Torque sway bar end link bolts to 60 ft lbs. and bracket bolts to 50 ft lbs. SEE PHOTO ON NEXT PAGE

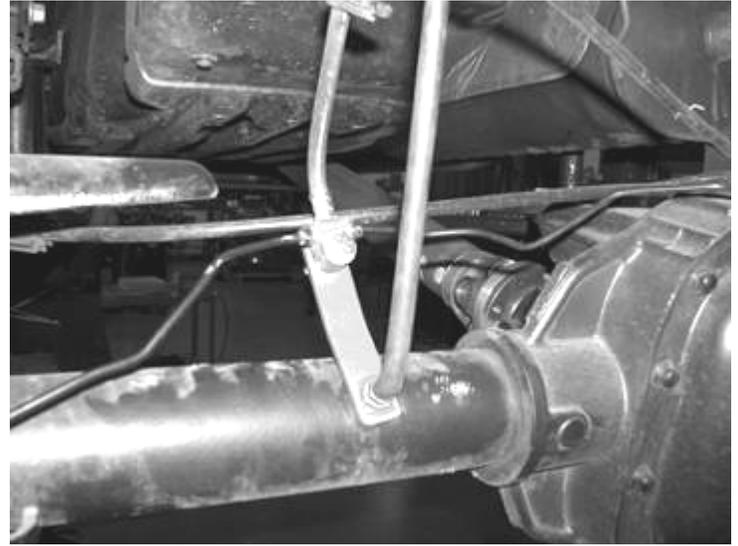


43. Repeat step forty-four on passenger side of vehicle.
44. Install the front tires and wheels. Torque lug nuts to wheel manufacturer's specifications.
45. Steer the truck left to right to make sure that the steering knuckle stops against the stop and factory control arm. **(This should be done with the truck on the ground)**

Double Check All Nuts And Bolts Are Now Tight Before Proceeding To The Rear.

REAR SUSPENSION INSTRUCTIONS:

46. 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.
47. Locate the factory brake line mount on the driver side of the axle. Remove the vent line from the bolt and remove the bolt, save hardware. Locate the supplied brake line bracket FT30059 and attach the side with the sleeve to the axle using the factory hardware. Using the supplied 3/8" x 2" bolt, nut, and washer, attach the brake line to the other end of the bracket. Reattach vent line. SEE PHOTO IN NEXT COLUMN.



48. Remove the four bolts attaching the rear drive shaft to the rear axle. Locate and install the supplied drive shaft spacer FT30072 between the drive shaft and the rear axle using the supplied 12mm bolts and washer. Torque bolts to 83 ft lbs. SEE PHOTO BELOW.



49. 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 PHOTO ON NEXT PAGE.



50. 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.

There are two possible emergency brake line bracket set up's on the F150's, determine which your model has and follow the proper step below 53 or 54 - 56.

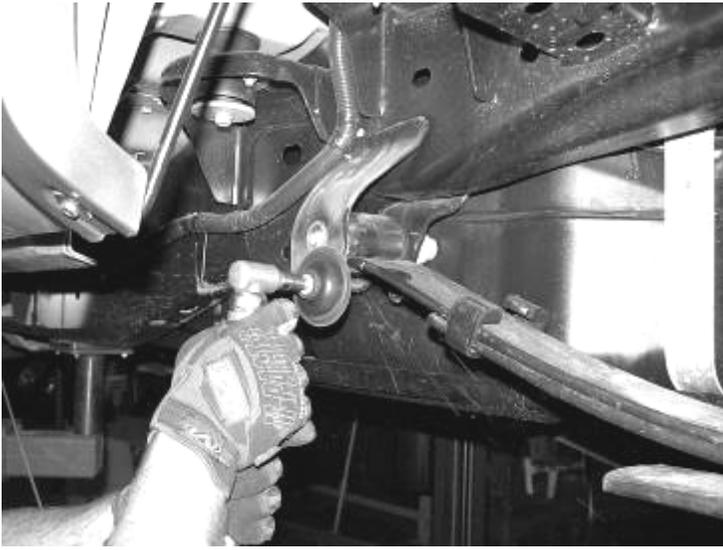
51. If your truck has a factory bolt on E-Brake Cable bracket on the driver side leaf spring hanger, remove the E-brake cable from the bracket and remove the bracket from the hanger. Discard the bracket and save the hardware. Locate FT30071 E-brake bracket and attach to the frame in the original location using the stock hardware. SEE PHOTO BELOW.



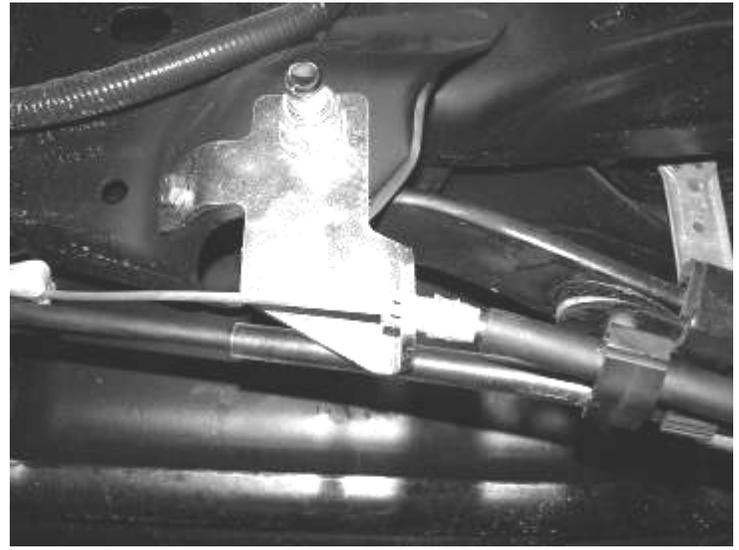
52. If your truck has the E-Brake bracket as one piece with the front leaf hanger, it will need to be marked and cut with a die grinder with a cut off wheel, from the hanger. Remove the E-brake cable from the bracket prior to cutting the hanger. SEE PHOTO BELOW.



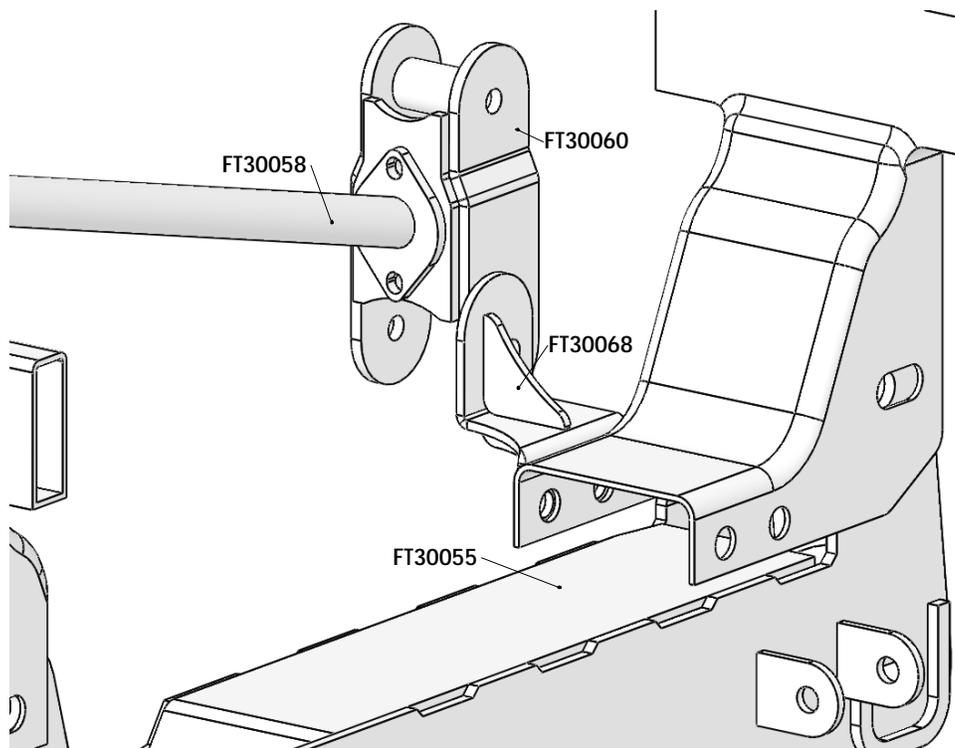
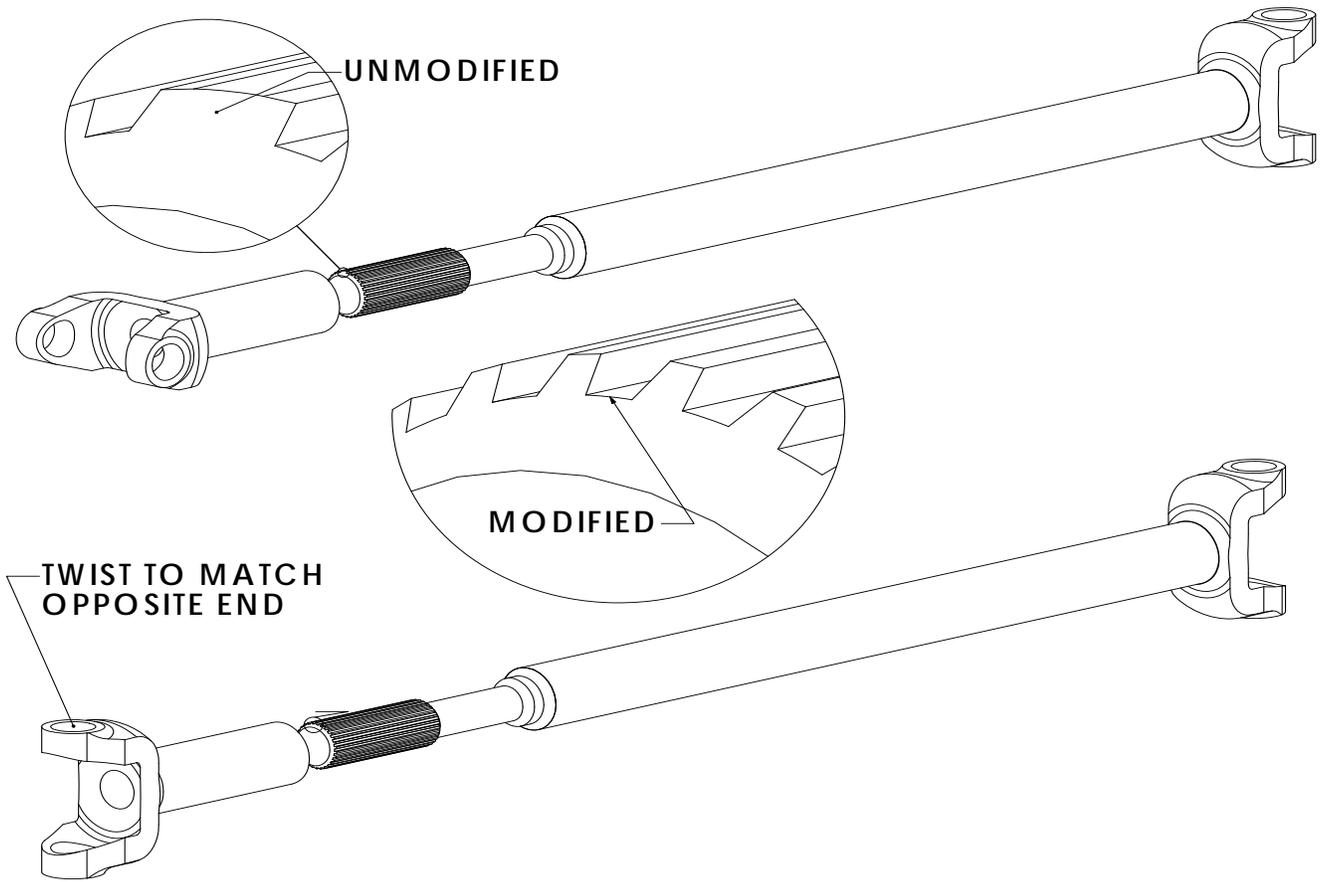
53. Remove the front spring bolt nut and save. Next, using a die grinder with a sanding disc, sand down the hanger and paint all bare metal. SEE PHOTO ON NEXT PAGE



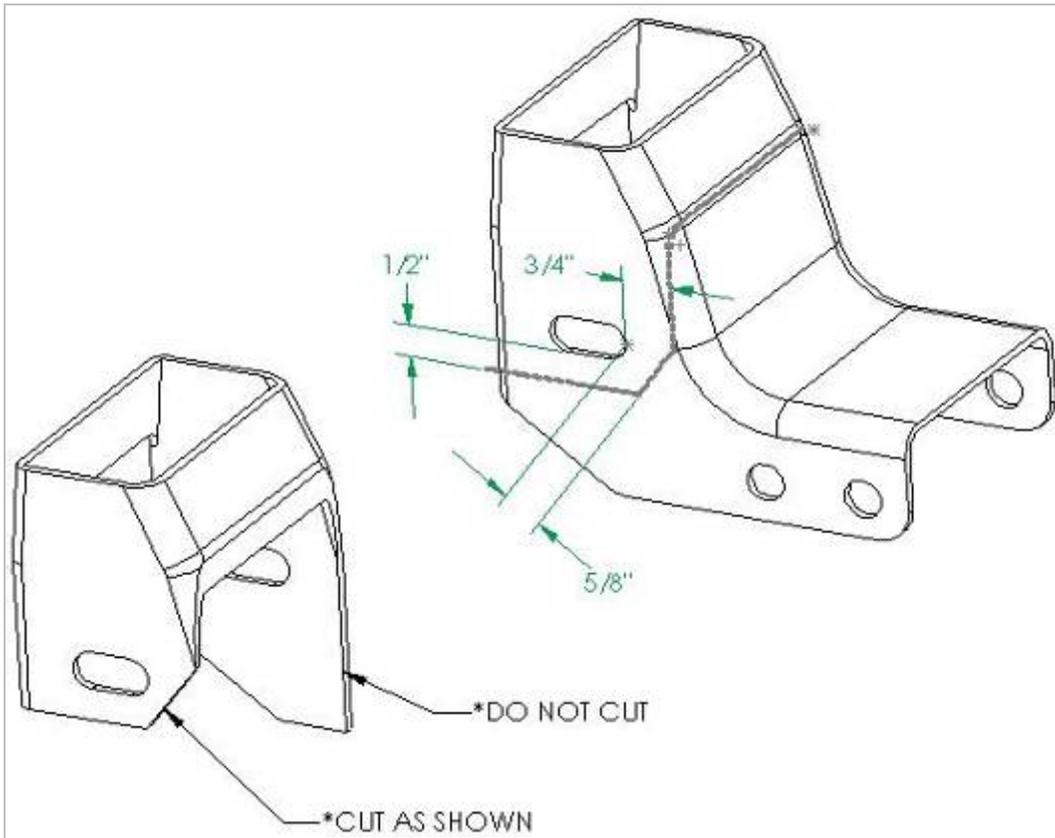
54. Locate FT30071 E-brake bracket and place it on the spring bolt and attach it the factory spring bolt nut. Using a drill with a 3/8" drill bit, drill a hole in the hanger to attach the front of the e-brake bracket. Using the supplied 3/18"x1 1/4" bolt, nut, and washer, bolt the front of the bracket to the hanger and torque to 30 ft. lbs. Re-install the e-brake cable into the new e-brake cable bracket. SEE PHOTOS BELOW AND IN NEXT COLUMN.



55. Recheck all bolts for proper torque. Recheck the front and rear brake hoses and ABS lines for proper clearances.
56. 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 bumper and valance.
57. Check the front-end alignment and set to the factory specifications. Re-adjust vehicles headlights.



View from Passenger Side Rear Forward



VIEW FROM DRIVER REAR

