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off-road driven!™

PRO COMP SUSPENSION

K4149B/K4149BP
52220B/52220BP
2009-2014 FORD F150 4WD 4" LIFT KIT

NOTE: This kit fits 2011-2014 vehicles equipped with an electric steering rack.

Stock 17" & 18" wheels will not work in conjunction with this kit.

IMPORTANT!: 18" AND LARGER WHEEL, NOT TO EXCEED 9" IN WIDTH
WITH A MAXIMUM BACKSPACING OF 5 1/2" MUST BE USED IN
CONJUNCTION WITH THIS LIFT KIT! EXCLUDES 18" REVERSE MOUNT
WHEELS. See pg. 5 for details.

This document contains very important information that includes warranty information and instructions for resolving problems you may encounter. Please keep it in the vehicle as a permanent record.

Box 1 of 4-PN 52220B/52220BP-1

Part #	Description	Qty.	Illus.	Page
91-5504	REAR CROSSMEMBER	1	3,6,8	8,9,10
91-5516	REAR CROSSMEMBER BRACE	1	6	9
91-5517	CROSSMEMBER SKID PLATE	1	8	10
91-5526	DIFFERENTIAL DROP: Front Drvr and Pass	2	2	7
91-5539	DIFFERENTIAL DROP: Rear Drvr	1	4	8
90-4248	FRONT DRIVESHAFT SPACER	1	9	11
90-5692	NUT PLATE: Brace	1	6	9
90-6705	HARDWARE PACK: Brace	2	-	-
70-0501501800	1/2" X 1 1/2" HEX BOLT Gr. 8	2	6	9
72-050100816	1/2" STOVER NUT Gr. C - Not Used	2	6	9
73-05000834	1/2" SAE HARDENED FLAT WASHER - 2 Not Used	4	6	9
90-6223	HARDWARE PACK: Skid Plate	1	-	-
70-0371251800	3/8" X 1 1/4" HEX BOLT Gr. 8	4	8	10
72-037100816	3/8" STOVER NUT Gr. C	4	8	10
73-03700034	3/8" HARDENED FLAT WASHER	8	8	10
90-6189	HARDWARE PACK: Differential	1	-	-
90-2217	HOSE: 5/16" ID X 3 1/2"	1	-	-
90-2216	HOSE MENDER: BRASS (5/16")	1	-	-
90-6701	HARDWARE PACK: Rear Crossmember	1	-	-
71-181502501000	18mm-2.5 X 150mm HEX BOLT 10.9	1	3	8
72-01810932	18mm-2.5 STOVER NUT Gr. C	1	3	8
73-01810934	18mm USS FLAT WASHER	2	3	8
90-6302	HARDWARE PACK: Differential	1	-	-
70-0561251800	9/16" X 4" HEX BOLT Gr. 8- 1 Not Used	4	2,4	7,8
73-05600034	9/16" HARDENED FLAT WASHER- 2 Not Used	8	2,4	7,8
72-056100816	9/16" STOVER NUT Gr. C- 1Not Used	4	2,4	7,8
90-6703	HARDWARE PACK: Leaf Spring Shim Pack	1	-	-
90-3085	FORD REAR END SHIMS	4	-	-
97-120	1/2" X 3 1/2" GR. 8 USS. HEX MACHINED HEAD	4	-	-
72-050100811	1/2" GR. 8 USS. UNPLATED HEX NUT	4	-	-
90-6716	HARDWARE PACK: Front Driveshaft Spacer	1	-	-
71-181502501000	10mm- 1.5 X 90mm HEX BOLT 12.9	6	9	11
90-9434	SWAY BAR MOUNT WASHER PLATE: Shim	2	-	-
91-5574	BUMPSTOP DROP	4	16	19
90-6314	HARDWARE PACK: Rear Bump Stop	1	-	-
70-0311001800	5/16" X 1" HEX BOLT Gr. 8 -Not Used	1	-	-
72-031100816	5/16" STOVER NUT Gr. C -Not Used	1	-	-
73-03100832	5/16" USS FLAT WASHER -Not Used	2	-	-
70-0371501800	3/8" X 1 1/2" HEX BOLT Gr. 8	2	14	18
72-037100816	3/8" STOVER NUT Gr. C	2	14	18
73-03700034	3/8" HARDENED FLAT WASHER	4	14	18
95-204F	2" LIFT BLOCK	2	15	18
31-40024	SPRING RETAINER COLLAR	4	11	12
61-40025	SPRING COLLAR	4	11	12
P-1381	LOWER SPRING PERCH	4	11	12
90-40027	STRUT BUMPSTOP DROP	4	11	12

Part #	Description	Qty.	Illus.	Page
13-90385	U-BOLT: 9/16"-18 x 3.75" x 10.50"	4	15	17
Box 2 of 4-PN 52209B/52209BP-2				
90-4253	KNUCKLE: Drvr	1	-	-
90-4254	KNUCKLE: Pass	1	-	-
90-6299	HARDWARE PACK: Front Brake Lines	1	-	-
70-0311001500	5/16" X 1" Gr. 5 HEX BOLT	2	-	-
72-03100100512	5/16" NYLOCK NUT	2	-	-
73-03100030	5/16" SAE FLAT WASHER	4	-	-
91-7210	BRAKE LINE BRACKET: Front Knuckle	2	-	-
90-6736	HARDWARE PACK: Caliper Bolt Spacers	1	-	-
62NWHDY/SAEXT	5/8" (thick) Hardened Flat Washer	4	-	-
Box 3 of 4-PN 52209B/52209BP-3				
91-5519	FRONT CROSSMEMBER	1	3,5	8,9
91-2126	COMPRESSION STRUT	2	14	14
13-90390	U-BOLT: 9/16"-18 x 3.36" x 12.50" -Not Used	4	-	-
91-5518	SWAY BAR DROP: Pass	1	10	13
90-9434	SWAY BAR MOUNT WASHER PLATE	2		
91-1435	COMPRESSION STRUT MOUNT	2	13	14
91-5502	REAR BRAKE LINE DROP	1	-	-
91-7826	EMERGENCY BRAKE BRACKET	1	14	17
90-6422	HARDWARE PACK: E-Brake Bracket	1	-	-
70-0501501800	1/2" X 1 1/2 HEX BOLT Gr. 8	1	14	17
73-05000034	1/2" HARDENED FLAT WASHER	2	14	17
72-0501100816	1/2" NYLOCK NUT Gr. 8	1	14	17
90-6314	HARDWARE PACK: Brake Line Drop/ Bump Kit	1	-	-
70-0311001800	5/16" X 1" HEX BOLT Gr. 8 -Not Used	1	-	-
72-031100816	5/16" STOVER NUT Gr. C -Not Used	1	-	-
73-03100832	5/16" USS FLAT WASHER -Not Used	2	-	-
70-0371501800	3/8" X 1 1/2" HEX BOLT Gr. 8	2	14	17
72-037100816	3/8" STOVER NUT Gr. C	2	14	17
73-03700034	3/8" HARDENED FLAT WASHER	4	14	17
90-6393	HARDWARE PACK: Front Brake Line Drops	1	-	-
90-3202	F150 BRAKELINE DROP	2	-	-
90-6299	HARDWARE PACK: Front Brake Lines	1	-	-
70-0311001500	5/16" X 1" Gr. 5 HEX BOLT	2	-	-
72-03100100512	5/16" NYLOCK NUT	2	-	-
73-03100030	5/16" SAE FLAT WASHER	4	-	-
90-6340	HARDWARE PACK: Sway Bar Drop	1	-	-
70-0431751800	7/16" X 1 1/4" HEX BOLT Gr. 8	4	10	11
72-043100816	7/16" STOVER NUT Gr. C	4	10	11
73-04300830	7/16" SAE FLAT WASHER	8	10	11
90-6319	HARDWARE PACK: Zip Ties	1	-	-
10999	ZIP TIE, 11", BLACK	12	-	-
90-6700	HARDWARE PACK: Cam Bolts	1	-	-
90-5532	CAM ECCENTRIC: F-150 Slotted	4	7	10

Part #	Description	Qty.	Illus.	Page
90-5533	CAM BOLT– Rear: 18mm-2.5 X 150MM 10.9	2	7	10
90-5535	CAM BOLT– Front: 18mm-2.5 X 160MM 10.9	2	7	10
90-6313	HARDWARE PACK: Crossmember	1	-	-
72-01810932	18mm STOVER NUT	4	7	10
73-01810934	18mm FLAT WASHER	4	7	10
90-6263	HARDWARE PACK: Compression Strut Bushings	1	-	-
15-11148	URETHANE BUSHING	8	13	14
90-2109	SLEEVE	4	13	14
90-6234	HARDWARE PACK: Compression Struts	1	-	-
70-0501251800	1/2" X 1 1/4" HEX BOLT Gr. 8	2	13	14
70-0504001800	1/2" X 4" HEX BOLT Gr. 8	4	13	14
72-050100816	1/2" STOVER NUT Gr. C	4	13	14
73-05000034	1/2" HARDENED FLAT WASHER	10	13	14
90-1915	COMPRESSION STRUT NUT PLATE	2	13	14
20-65302	HARDWARE PACK: 9/16" HI-NUTS	1	15	18
Box 4 of 4-PN 52209B-4				
932008	9000 SERIES SHOCK	2	-	-
91-2977	COIL SPACER	2	12a	12
90-6317	HARDWARE PACK: Spacer Mount	1	-	-
72-043200810	7/16" GR. 8 HEX NUT	6	12a	12
73-04300830	7/16" SAE FLAT WASHER	6	12a	12
73-04300836	7/16" SPLIT LOCK WASHER	6	12a	12
Box 4 BP of 4-PN 52209BP-4				
ZX2042	PRO RUNNER MONOTUBE REAR SHOCKS	2	-	-
91-2977	STRUT SPACER	2	12a	12
90-6317	HARDWARE PACK: Spacer Mount	1	-	-
72-043200810	7/16" GR. 8 HEX NUT	6	12a	12
73-04300830	7/16" SAE FLAT WASHER	6	12a	12
73-04300836	7/16" SPLIT LOCK WASHER	6	12a	12

Optional Equipment Available from your Pro Comp Distributor!

52213B/52213BMX (2009-2013 only)

52219B/52219BP (2014 only)

62159

62160

52209BMX-4* (2009-2013 only)

52213BMX-4* (2009-2013 only)

52218BMX* (2014 only)

52109

Mounting kit: 72096B*, Bars: 72500B*

13137

2WD 6" Suspension Lift Kit

2WD 4" Suspension Lift Kit

4WD Level Lift Kit

2WD Level Lift Kit

4WD Coil Over Upgrade Kit

2WD Coil Over Upgrade Kit

4WD Coil Over Upgrade Kit

4WD Skid Plate

Traction bars: 4wd Crew cab short bed

Add a leaf kit: (Use with Suspension lift kit)

*Install on Pro Comp lift kit equipped vehicles ONLY!

Tire & Wheel Information:

Due to differences in manufacturing, dimensions and inflated measurements, tire and wheel combinations should be test fit prior to installation. Tire and wheel choice is crucial in assuring proper fit, performance, and the safety of your Pro Comp equipped vehicle. For this application, a 18" and larger wheel not to exceed 9" in width with a maximum backspacing of 5 1/2" is acceptable. A quality tire of radial design, not exceeding 35" tall X 13.5" wide is recommended. Please note that the use of a 35" X 13.5" tire may require fender modification. Violation of these recommendations will not be endorsed as acceptable by Pro Comp Suspension and will void any and all warranties either written or implied.

IMPORTANT!: 18" OR LARGER WHEELS MUST BE USED IN CONJUNCTION WITH THIS LIFT KIT! EXCLUDES 18" REVERSE MOUNT WHEELS.

Please refer to your service manual for more information.

A special removal tool is required for safe removal of the tie rods. (PN T64P-3590-F).

These tool may be purchased at your local Ford dealer.

You may be able to rent any of these tools at your local parts store.

Special Tools:

- ◆ This installation requires a professional mechanic!
- ◆ We recommend that you have access to a factory service manual for your vehicle to assist in the disassembly and reassembly of your vehicle. It contains a wealth of detailed information.
- ◆ Prior to installation, carefully inspect the vehicle's steering and driveline systems paying close attention to the tie rod ends, ball joints, wheel bearing preload, pitman and idler arm. Additionally, check steering-to-frame and suspension-to-frame attaching points for stress cracks. The overall vehicle must be in excellent working condition. Repair or replace all worn or damaged parts!
- ◆ Read the instructions carefully and study the illustrations before attempting installation! You may save yourself a lot of extra work.
- ◆ Check the parts and hardware against the parts list to assure **(2009-2013 only)** that your kit is complete. Separating parts according to the areas where they will be used and placing the hardware with the brackets before you begin will save installation time.
- ◆ Check the special equipment list and ensure the availability of these tools.
- ◆ Secure and properly block vehicle prior to beginning installation.
- ◆ Always use NEW cotter pins on re-assembly! (These items are NOT supplied)
- ◆ ALWAYS wear safety glasses when using power tools or working under the vehicle!
- ◆ Use caution when cutting is required under the vehicle. The factory undercoating is flammable. Take appropriate precautions. Have a fire extinguisher close at hand.
- ◆ **IT IS ADVISABLE THAT YOU HAVE HELP AVAILABLE WHEN INSTALLING THIS KIT. SOME COMPONENTS ARE HEAVY AND AWKWARD. ADDITIONAL HELP IS GOOD INSURANCE AGAINST INJURY!**
- ◆ Foot pound torque readings are listed on the Torque Specifications chart at the end of the instructions. These are to be used unless specifically directed otherwise. Apply thread lock retaining compound where specified.
- ◆ **Please note that while every effort is made to ensure that the installation of your Pro Comp lift kit is a positive experience, variations in construction and assembly in the vehicle manufacturing process will virtually ensure that some parts may seem difficult to install. Additionally, the current trend in manufacturing of vehicles results in a frame that is highly flexible and may shift slightly on disassembly prior to installation. The use of pry bars and tapered punches for alignment is considered normal and usually does not indicate a faulty product. However, if you are uncertain about some aspect of the installation process, please feel free to call our tech support department at the number listed on the cover page. We do not recommend that you modify the Pro Comp parts in any way as this will void any warranty expressed or implied by the Pro Comp Suspension company.**
- ◆ If you use traction bars, ES9000 shocks may hit the traction bar mount, if it does a MX6 Series shock should be used.

Front Installation:

1. Prior to installing this kit, with the vehicle on the ground. Measure the height of your vehicle. This measurement can be recorded from the center of the wheel, straight up to the top of the inner fender lip. Record the measurements below.
2. Ensure that your work space is of ade-

LF: _____ RF: _____

LR: _____ RR: _____

quate size and the work surface is level. Place the vehicle in park and set parking brake. Place blocks both in front of and behind the rear wheels. Place your floor jack under the front cross member and raise vehicle. Place jack stands under the frame rails behind the front wheel wells and lower the frame onto the stands. Remove the jack and remove the front wheels.

3. Remove any skid plates if necessary.
4. Work on one side of the vehicle at a time.
5. Unbolt the **OE** brake line and bracket from the side of the knuckle. Save the hardware for reinstallation.
6. Remove the front caliper and bracket assembly from the front knuckle by removing the **(2)** retaining bolts.
NOTE: Make sure you do not let the calipers hang on the brake lines or damage will occur.
7. Remove the front rotors from the front hub.
8. Remove the dust cap and the nut from the end of the CV in the hub.
9. Remove the anti-lock wiring and sensor from the hub if applicable.
10. Remove the vacuum line from the rear of the hub.

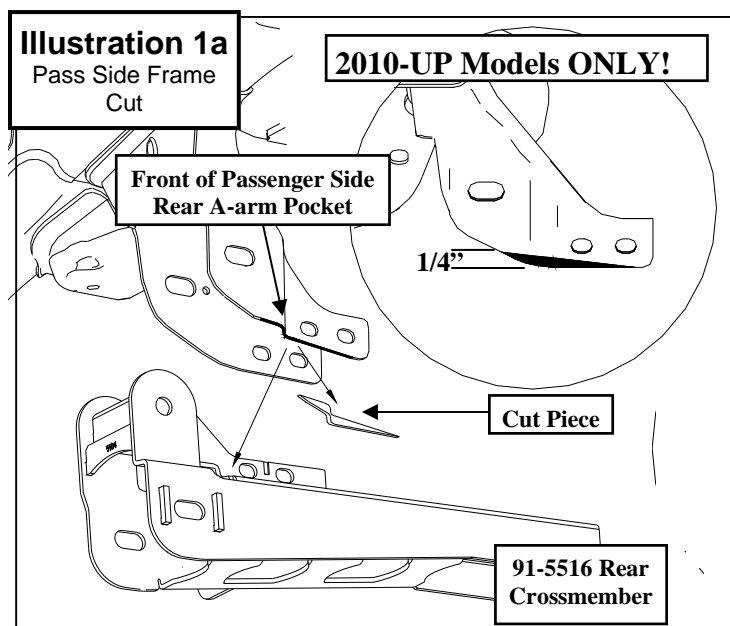
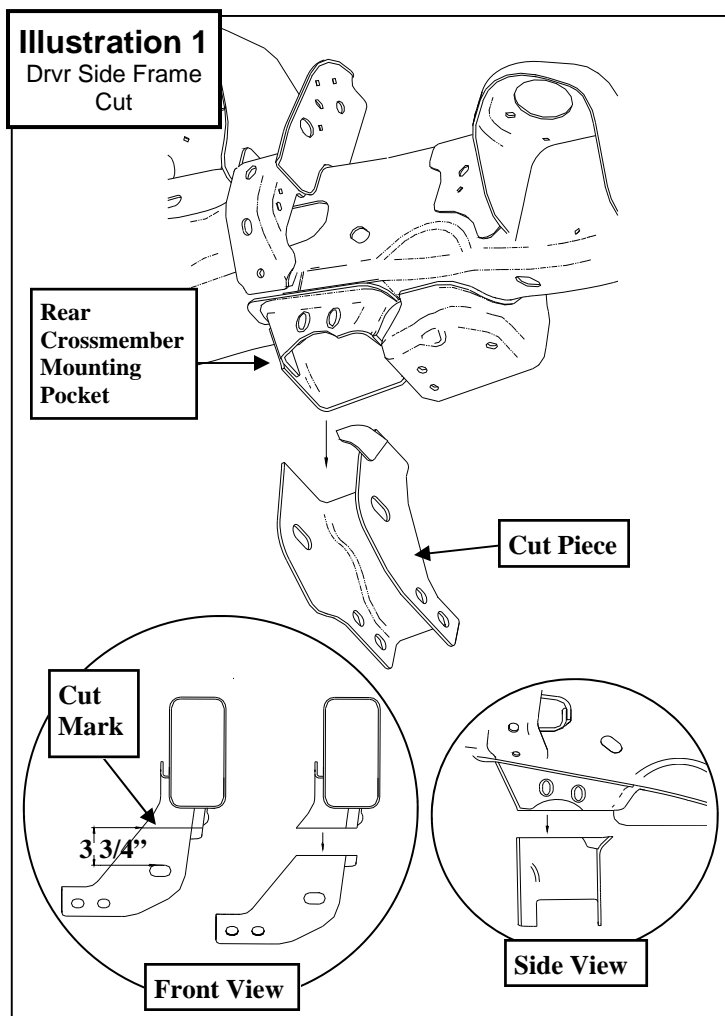
11. Disconnect the sway bar end links from the sway bar. Save hardware for reinstallation.
12. Unbolt and remove the sway bar from the vehicle. Save hardware for reinstallation.
13. Remove the tie rod end nut and separate from the knuckle using the appropriate tool.
14. Remove the upper ball joint nut from the knuckle and separate using the appropriate tool.
15. Remove the lower ball joint nut, separate using the appropriate tool. Remove the knuckle from the vehicle while pulling it away from the CV and set the knuckle aside.
16. Remove the three nuts from the top of the coil over assembly and the one large nut and bolt on the bottom. Remove the coil from the vehicle. Save hardware for reinstallation.
17. Remove the two bolts that retain the lower a-arms and remove them from the truck.
18. Repeat on the other side of the vehicle.
19. Mark the driveshaft orientation and disconnect the front drive shaft from the differential. Secure the driveshaft up and out of the way of the work area.
20. Remove the rear cross member brace; retain **(2)** of the bolts and nuts for reinstallation.
NOTE: Careful heating of the OE bolts may be necessary to loosen the factory thread locker.
21. Make sure that the front differential is well supported, remove the existing hardware from both passenger and driver side differential mounting areas. Carefully lower differential out of vehicle and set aside. Note the vent routing for reinstall.

Be careful the differential is heavy.

22. In order to install the rear crossmember, the driver side control arm mounting pocket needs to be removed. Measure up $3\frac{3}{4}$ " from the top of the cam bolt hole and draw a horizontal line across the entire pocket. See **Illustration 1**.

IMPORTANT!: For 2010-UP models ONLY, the front of the passenger side rear A-arm pocket will need to be trimmed approximately $\frac{1}{4}$ " in order to install the rear crossmember. See **ILLUSTRATION 1a.**

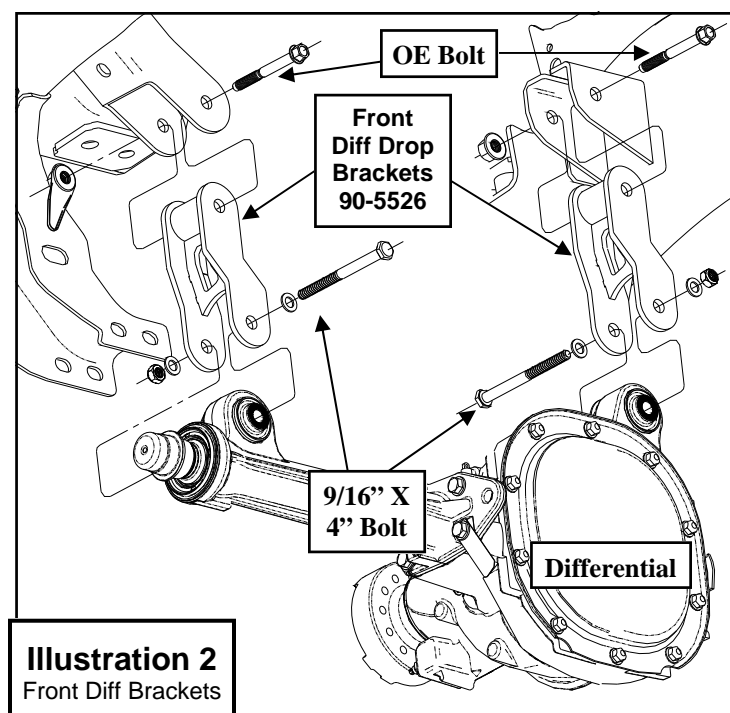
23. Using a suitable cutting tool, (abrasive cutoff wheel, Sawz-all, etc.) cut the frame along the previously marked lines as shown in **Illustration 1 & 1a (For 2010 Models only)**. After cutting the section out of the frame, clean the area thor-

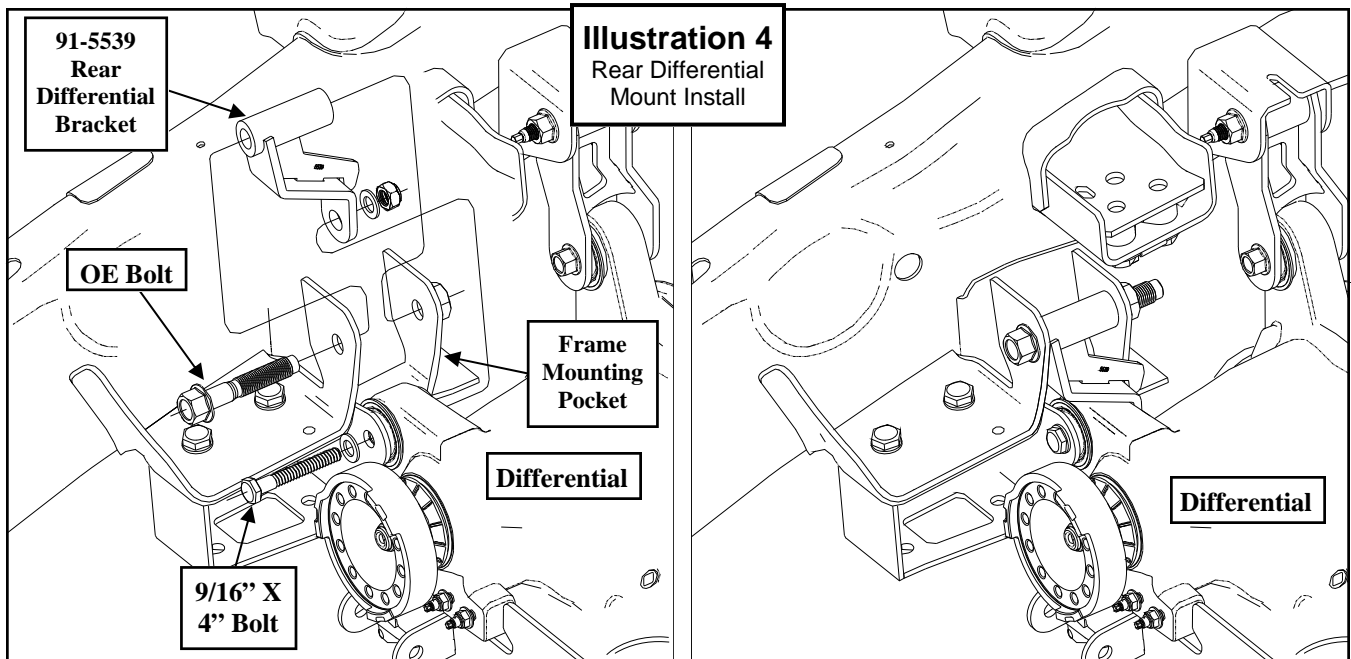
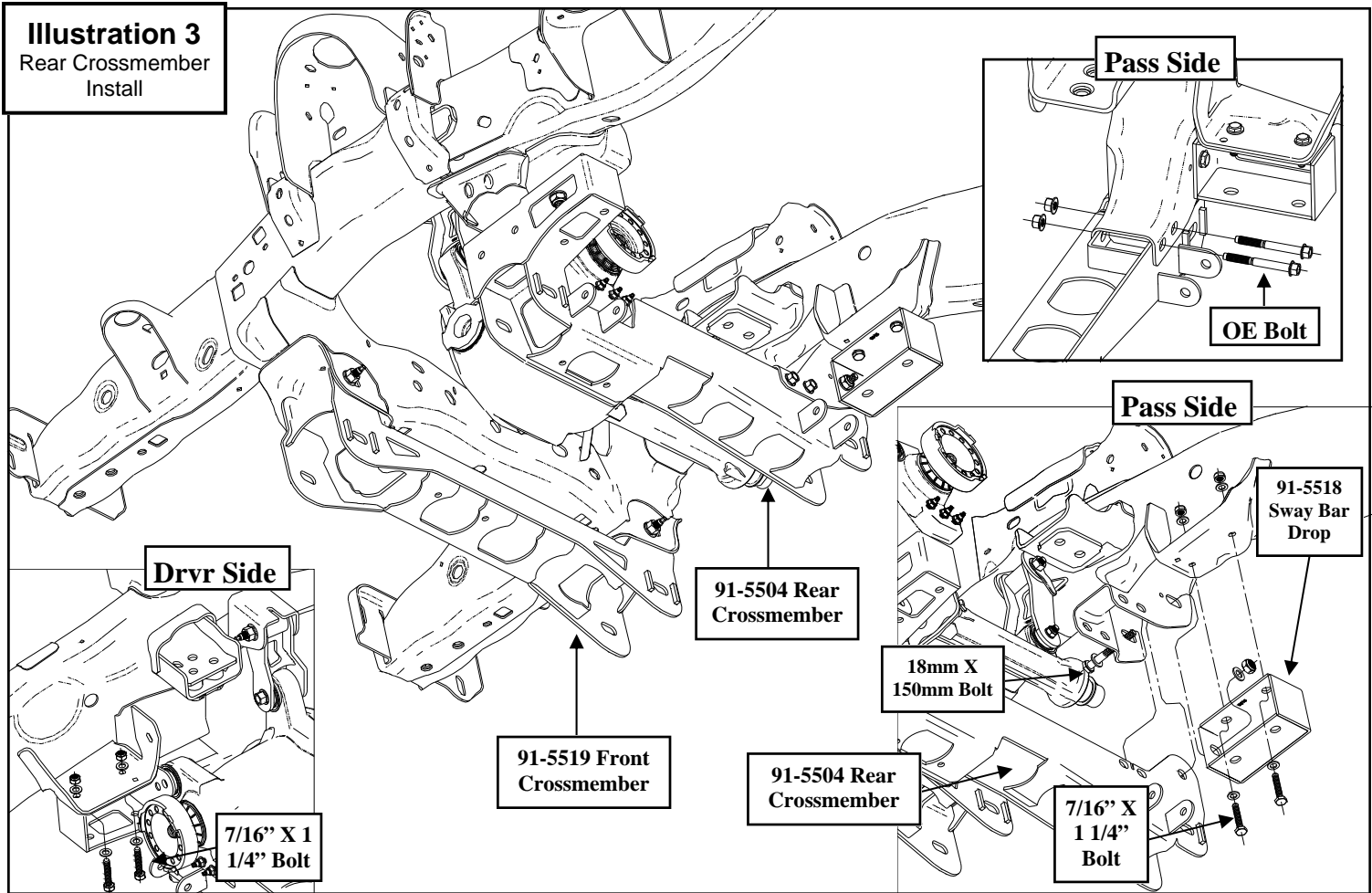


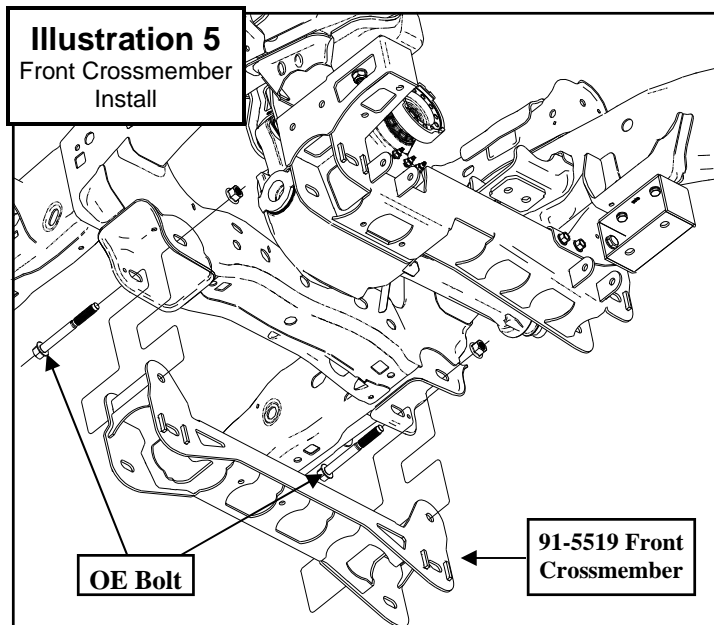
oroughly and paint the exposed metal with a good quality paint.

24. Install the driver side and passenger side front differential drop brackets **91-5526** (**drv** and **pass**) to the frame with the previously removed **OE** bolts and hardware. Leave the bolts loose. See **Illustration 2**.

NOTE: The jog in the brackets will face towards the front of the truck.







25. Carefully hang the differential into the front differential drop brackets with the supplied **9/16" X 4"** bolts and hardware from pack (**90-6302**). Leave the bolts loose. See **Illustration 2**.

26. Using the differential drop extension pack (**90-6189**) fit the new hose to the differential. Place the supplied plug in the end of the tube and connect the factory tube to it. Route the vent hose as previously noted. Use the supplied zip ties to secure the hose.

27. Raise the rear crossmember (**91-5504**) into place and install the supplied

passenger side **18mm X 150mm** crossmember bolt. Install the bolt with the head to the front. Do not install the nut at this time. See **Illustration 3**.

28. Install the passenger side sway bar drop bracket (**91-5518**) onto the previously installed **18mm** crossmember bolt. Install the nut onto the crossmember bolt. Leave the bolts loose. See **Illustration 3**.

IMPORTANT!: Due to variations in frame tolerances from the factory, sway bar mounting positions can vary. It may be necessary to shim the driverside rear crossmember mount to allow proper alignment of the (91-5516) rear crossmember brace. Test fit the rear crossmember brace after the installation of the rear crossmember (91-5504) and shim if necessary using shim (90-9434).

25. Secure the passenger side sway bar drop bracket (**91-5518**) to the **OE** sway bar mounting holes in the frame using the supplied **7/16" X 1 1/4"** bolts and hardware. Leave the bolts loose. See **Illustration 3**.

26. Install the (**2**) **OE** crossmember support brace bolts into the (**2**) remaining holes on the pass side of the rear crossmember. Leave the bolts loose. See **Illus-**

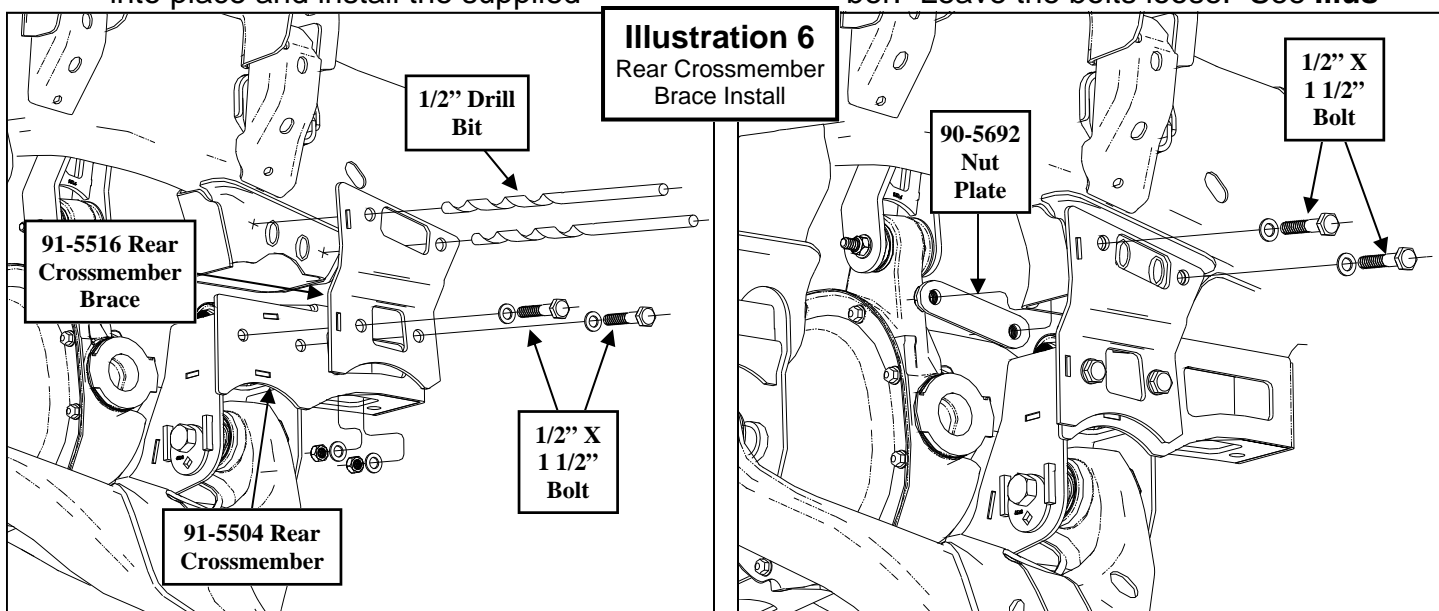


Illustration 7
A-Arm Install

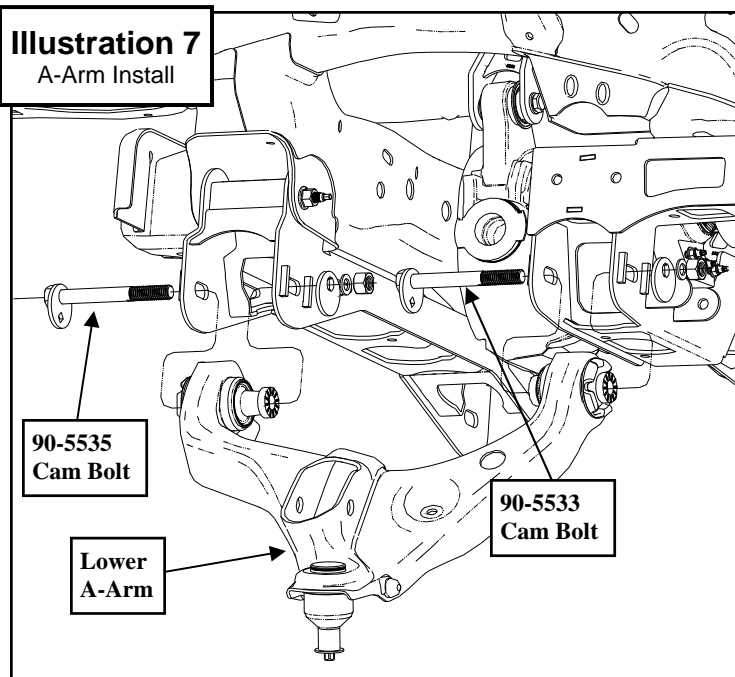
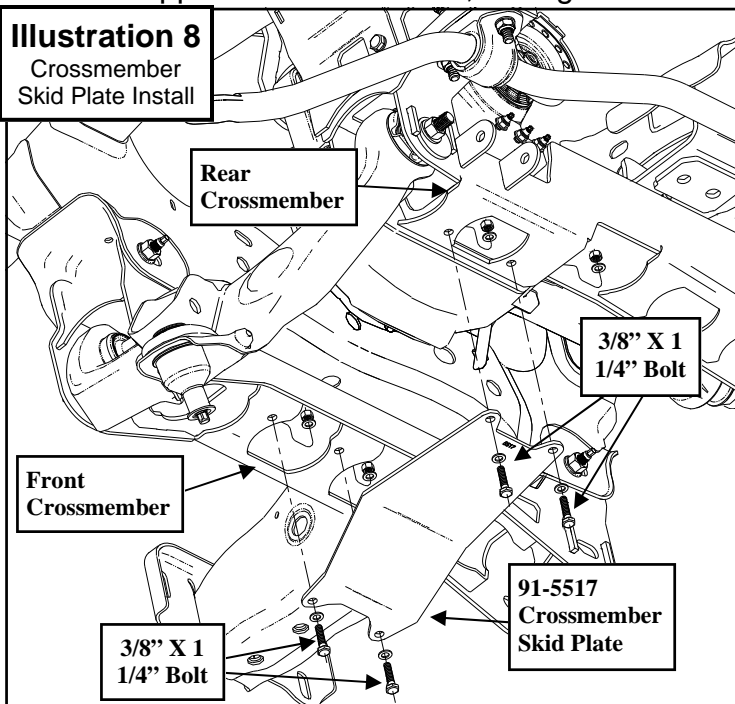


Illustration 3.

27. Secure the rear crossmember (91-5504) to the driver side OE sway bar mounting holes in the frame using the supplied 7/16" X 1 1/4" bolts. Leave the bolts loose. See **Illustration 3**.
28. Install the rear differential drop bracket (91-5539) to the differential using the supplied 9/16" X 4" bolt, through the



mounting hole in the rear crossmember, with the head facing the rear of the vehicle. Leave the bolts loose. See **Illustration 4**.

29. Install the front cross member (91-5519) into original front A-arm mounting locations, using the factory bolts with the heads to the front, leave loose. See **Illustration 5**.

IMPORTANT!: 2012 –Up models, the bottom of the A-arm pocket may need to be trimmed approximately 1/4" in order to fully install the front crossmember.

30. To ensure proper rear crossmember placement, test fit the driver side A-arm in the crossmember mounting pockets. Secure using the supplied cam bolts (90-5533 rear and 90-5535 front), cam eccentric (90-5532), 18mm washers and nuts.
31. Once the A-Arm is securely in place, tighten the previously installed 7/16" hardware and the OE pass side crossmember bolts and hardware. Remove the A-Arm and cam bolts from the vehicle.
32. Install the rear crossmember brace (91-5516) to the rear crossmember using the 1/2" X 1 1/2" bolts and hardware. Tighten the bolts. See **Illustration 6**.
33. Use the upper holes in the crossmember brace as a guide for drilling through the frame. See **Illustration 6**.
34. Center punch and drill the holes using a 1/2" drill bit. See **Illustration 6**.
35. Secure the upper holes in the rear crossmember brace (91-5516) to the frame using the 1/2" X 1 1/2" bolts and nut plate (90-5692). See **Illustration 6**.
36. Secure the rear upper differential mount to the frame using the previously removed OE bolt. See **Illustration 4**.

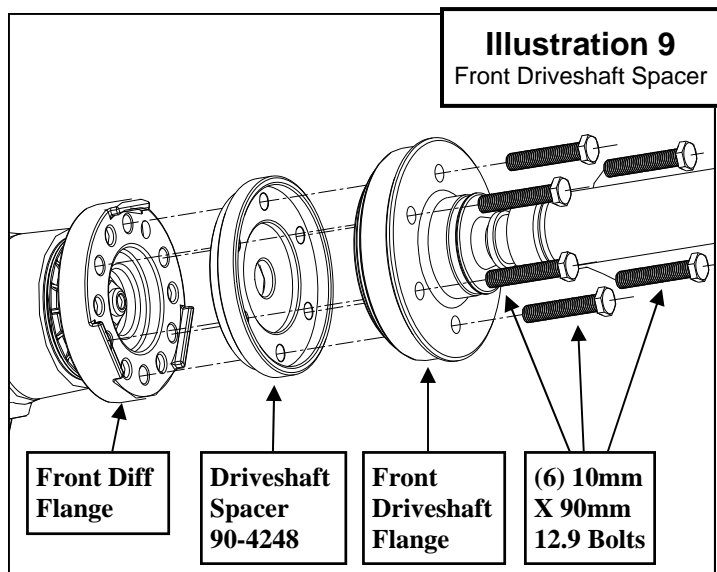


Illustration 9
Front Driveshaft Spacer

37. Install the lower a-arms into the new cross members with the supplied cam bolts (**90-5533 front and 90-5535 rear**), cam eccentric (**90-5532**), 18mm washers and nuts. The cams should fit between the cam guides on the cross members. Center the cams in the guides. You will torque the bolts at the end of the install when the vehicle is on the ground. See **Illustration 7**.

42. Torque all differential, sway bar and crossmember hardware according to the torque chart on page **22** or to manufacturers specifications.

NOTE: The rear cross member is slotted, the rear cross member needs to be pushed as far to the Passenger side as possible before it is tightened.

43. Reinstall the front driveshaft to the differential by slipping in the new aluminum front driveshaft spacer (**90-4248**) and fasten with (**6**) supplied 10mm– 1.5 X 90mm 12.9 bolts. Be sure to use red thread locker on these bolts. See **Illustration 9**. Torque the bolts according to the chart on page **22**. Rotate driveshaft to check for binding. If it binds the driveshaft must be clearanced by a qualified driveline shop.

NOTE: The use of this driveshaft spacer is intended for light usage only.

If the intended usage is for high speed off road, this spacer should not be installed. The factory front driveshaft should be lengthened by a qualified driveline shop.

Pro Comp takes NO responsibility for damage caused as a result of the installation of this spacer.

44. Install the sway bar frame mounts to the sway bar drop brackets using the previously removed **OE** bolt plates, spacer plates (**90-9434**), **OE** and hardware. See **Illustration 10**.

45. Secure the sway bar end links to the sway bar using the previously removed **OE** hardware.

46. Torque the sway bar mount hardware to **60** ft./lbs.

47. Transfer all the parts from the factory knuckles to the supplied Pro Comp knuckles (**90-4253 drvr and 90-4254 pass**) except the vacuum actuator.

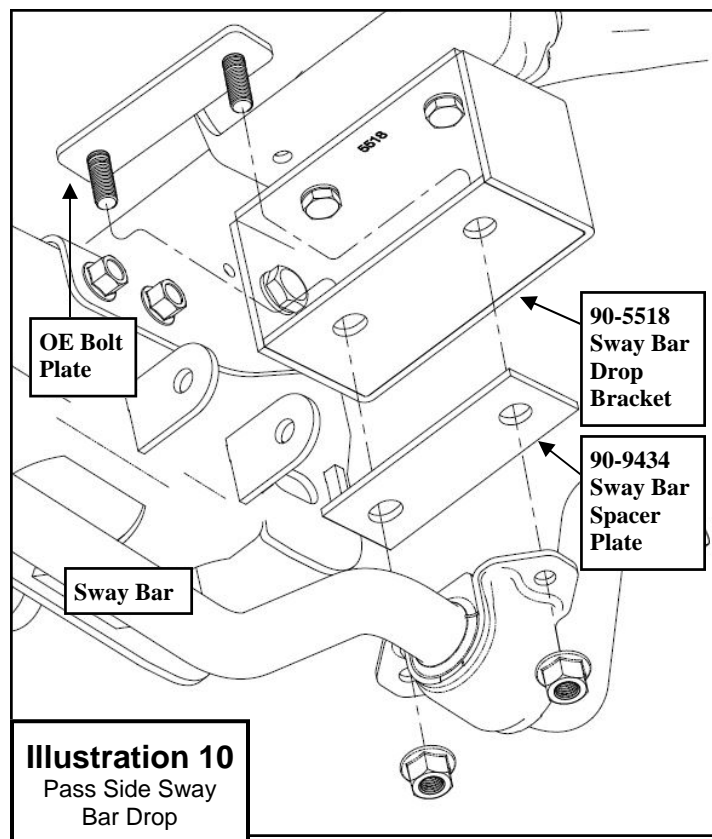
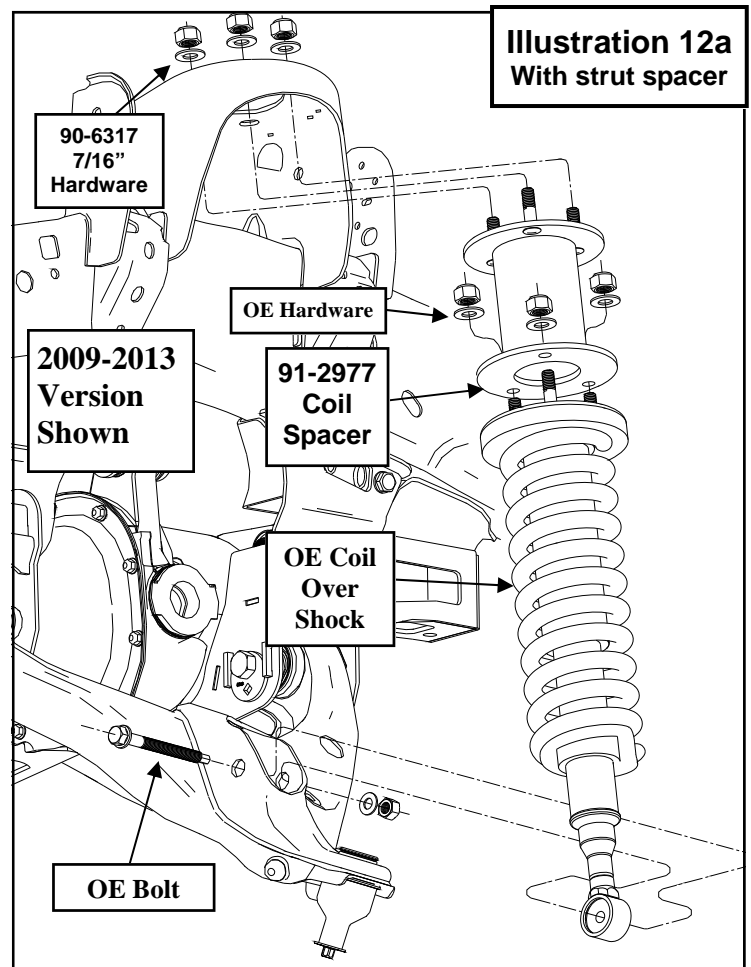
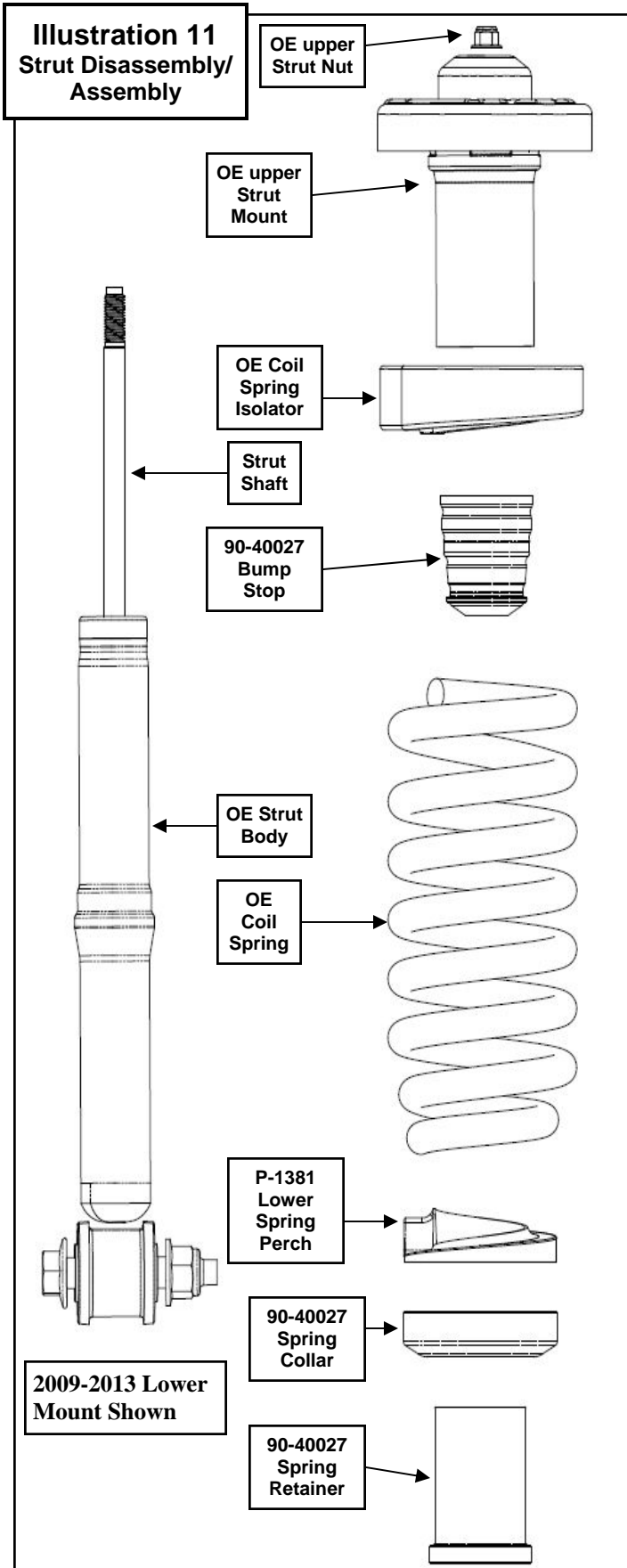


Illustration 10
Pass Side Sway Bar Drop



NOTE: Tighten all the factory hardware carefully. Be sure to follow the factory assembly procedures and torque specifications.

48. **STRUT SPACERS** (ILLUSTRATION 11): Scribe an index mark on the top of the **OE** coil spring to the upper strut mount.
49. Mark the orientation of the lower mount cross pin.

CAUTION: The coil is under extreme pressure and severe bodily injury may occur if the coil spring is disassembled without using a coil spring compressor.

50. Compress the coil spring on the strut assembly with a suitable coil spring compressor so that the coil spring has about **3/8"** play in the strut and remove the upper strut isolator retaining nut.

NOTE: Do not use an impact gun to remove the retaining nut. It will damage the strut shaft.

51. Remove the **OE** coil spring isolator from the upper strut mount. Save the isolator for reuse.

NOTE: Inspect the front shock assembly for any damage or fluid leakage. Replace if necessary.

52. Remove the **OE** bump stop from the upper strut mount.

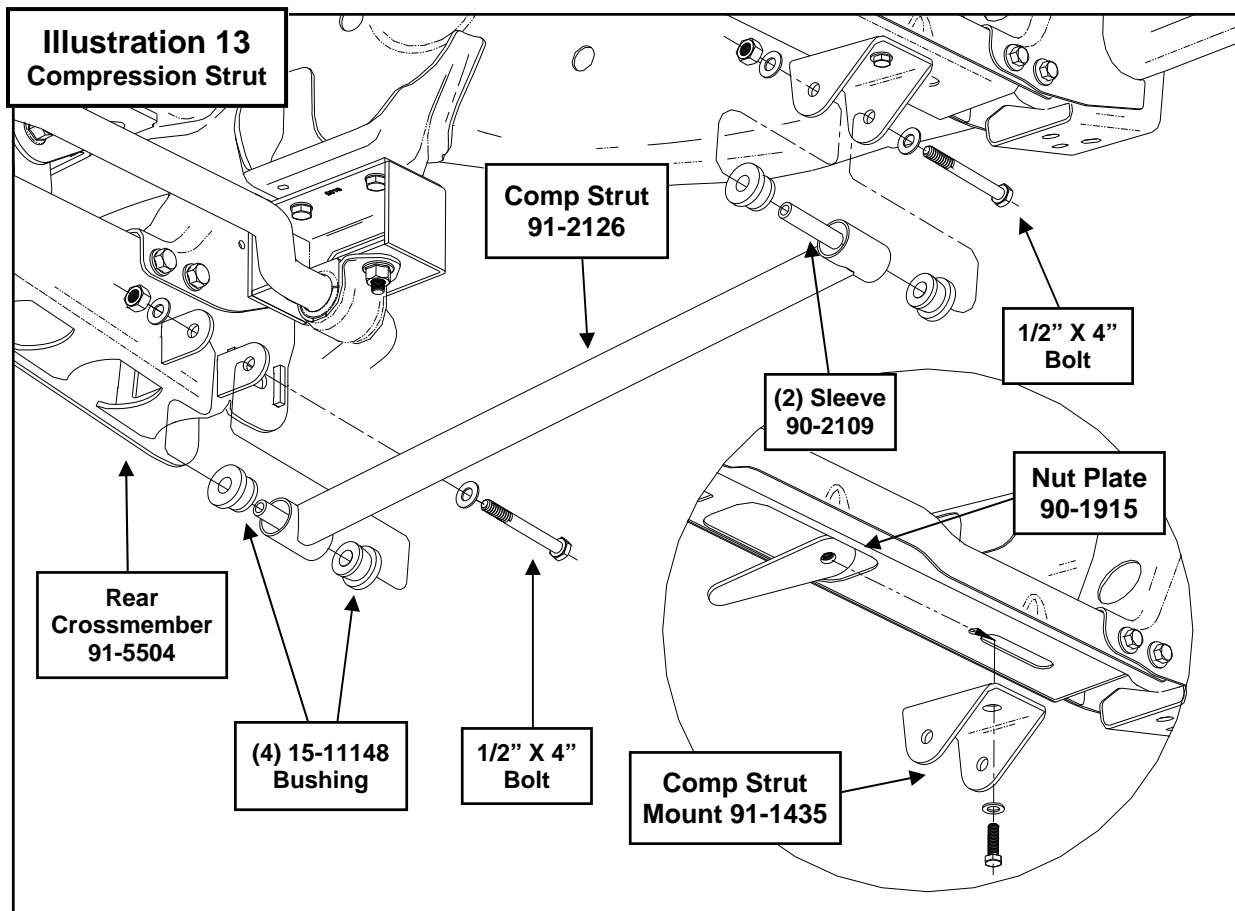
NOTE: Be sure to note the orientation of the bumpstop in the upper strut mount

53. Carefully remove the coil spring from the strut.
54. Remove the **OE** lower spring perch from the strut by carefully tapping it with a hammer
55. Remove the **OE** coil spring retainer.

NOTE: The seal protector may need to be removed to allow the coil spring

retainer to be slid off.

56. Install the new spring retainer (**31-40024**) onto the **OE** strut body
57. Install the spring collar (**61-40025**) over the spring retainer (**31-40024**) with the flat side facing up.
58. Install the lower spring perch (**P-1321**) and seat onto the spring collar (**61-40025**).
59. Reinstall the **OE** seal protector onto the strut body.
60. Install the new bump stop (**90-40027**) onto the strut shaft in the same orientation as the **OE** bump stop.
61. Reinstall the compressed coil spring onto the strut assembly using the reference marks as a guide.
62. Install the **OE** spring isolator and the upper strut mount onto the strut assembly.
63. Re-attach the upper strut mount using the **OE** hardware. Torque the upper strut mounting plate retaining nut to **20** ft./lbs.
NOTE: Failure to properly tighten the upper strut mounting nut will result in suspension noise.
64. Decompress the coil spring on the strut assembly. Make sure that the spring is seated correctly into the strut assembly and aligned with the previously scribed index mark on the upper strut mounting plate.
65. Attach the spacer (**91-2977**) to the top of the shock using the previously removed **OE** hardware. See **Illustration 12b**.
66. Install the strut assembly into the strut mounting locations. Secure using the **7/16"** supplied hardware on the top from hardware pack (**90-6317**). Torque to **45-50** ft./lbs. See **Illustration 12b**.
67. **2009-2013 models:** Install the **OE** bolt through the lower shock mount and a-



arm. See **Illustration 12a**. Torque to factory specifications. **2014 models:** Secure the lower shock mount bar pin to the a-arm using the previously removed **OE** hardware.

68. Repeat steps 49 through 68 on the remaining side of the vehicle.
69. Support the lower A-arms. Position the new front knuckles. Attach the knuckle to the lower ball joint.

NOTE: Correctly position and slide the vacuum actuator over the CV before the next step.

70. While raising the knuckle and lower control arm slide the CV through the vacuum actuator and the knuckle. Attach the nut to the end of the CV shaft. Torque to **17** ft/lbs. and attach the dust cap. Torque the small aluminum vacuum cover bolts to **11** ft/lbs.
71. Attach the knuckle to the upper ball

joint. Torque to **85** ft/lbs. Torque the lower A-arms nut to **111** ft/lbs.

NOTE: Check lower control arm to CV boot clearance at full droop. The lower control arm may need to be trimmed and sanded to prevent contact.

72. Connect the anti-lock wiring harness and sensor to the hub if applicable.
73. Install the supplied brake line bracket (**91-7210**) to the trailing edge of the knuckle using the previously removed **OE** bolt.
74. Secure the **OE** brake line bracket on the front brake line to the new bracket (**91-7210**) using the **5/16" X 1"** bolt and hardware.
75. Attach the vacuum lines to the rear of the hub.
76. Install the front rotors on to the front hub.

77. Install the front calipers on to the front rotors by reinstalling the retaining bolts. Torque to factory specifications.

NOTE: On 2010-Up models, the installation of the caliper bolt spacers (90-6736 2 per side) will be necessary to keep the end of the bolts from contacting the brake rotor.

NOTE: For 2010-Up models, the brake caliper mounting bracket holes will need to be drilled out to 5/8". Also the casting nubs on the caliper mounting brackets (the bottom flat surface near the mounting holes) may need to be sanded smooth for brake caliper installation.

78. Install the tie rod end to the knuckle. Torque to **111** ft/lbs.

79. Repeat the installation on the other side of the vehicle.

80. Remove stock brake line bracket from frame. Carefully remount the brackets with the supplied brake line drops (**90-3202 drv**r and **pass**) in between bracket and frame. Use factory hardware to fasten the shorter end of the bracket to the frame. Position the drops, best for your application. Use the supplied hardware from pack (**90-6299**) to fasten **OE** bracket to the new brake line drop.

WARNING!: Make sure the brake lines that you just modified are not resting against any moving parts.

81. Install the bushings (**15-11148**) and sleeves (**90-2109**) from hardware pack (**90-6263**) into the compression struts. See **Illustration 13**.

82. Install the compression struts (**91-2126**) into the mounting tabs on the rear cross member using supplied **1/2" X 4"** hardware. See **Illustration 13**.

83. Place the supplied nut plates (**90-1915**) inside the transmission cross member and attach the mounts (**91-1435**) using the supplied **1/2" X 1 1/4"** bolt and wash-

ers. See **Illustration 13**.

84. Rotate the compression struts (**91-2126**) up and secure them to the mounts using the supplied **1/2" X 4"** hardware. See **Illustration 13**.

85. Torque all compression strut hardware according to the torque chart on page **23**.

86. Install the crossmember skid plate (**91-5517**) to the front and rear crossmembers using the supplied **3/8" X 1 1/4"** bolts and hardware. See **Illustration 8**.

87. Reinstall the wheels and tires and lower the vehicle to the ground. Torque the factory wheels to **150** ft/lbs. If you are using aftermarket wheels follow the manufacturers recommended specifications.

88. Recheck all hardware for proper installation and torque at this time.

89. Torque the **18MM** cam bolts to **180-200** ft/lbs.

90. On both sides of the vehicle, check the routing of the brake lines and the ABS wire harnesses. There must be no pinching, rubbing, or stretching of either component. Use zip ties to secure these items. At full droop, cycle the steering from lock to lock while observing the reaction of these components. Reposition them if needed.

IMPORTANT! BE SURE TO BRING THE VEHICLE IMMEDIATELY TO A REPUTABLE ALIGNMENT SHOP TO BE ALIGNED!

IMPORTANT!: AFTER INSTALLATION OF KIT AND BEFORE THE VEHICLE IS FIRST STARTED, BE SURE TO CENTER THE FRONT WHEELS AND THE STEERING WHEEL. IF THE FRONT WHEELS AND THE STEERING WHEEL ARE NOT CENTERED BEFORE STARTING THE VEHICLE, IT MAY TRIGGER A DIAGNOSTIC TROUBLE CODE THAT WILL HAVE TO BE RESET BY THE MANUFACTURERS SERVICE FACILITY.

NOTE: SEE PAGE 20 FOR STEERING STOP ADJUSTMENT INSTRUCTIONS.

NOTES:

- ⇒ **On completion of the installation, have the suspension and headlights re-aligned.**
- ⇒ **After 100 miles recheck for proper torque on all newly installed hardware.**
- ⇒ **Recheck all hardware for tightness after off road use.**

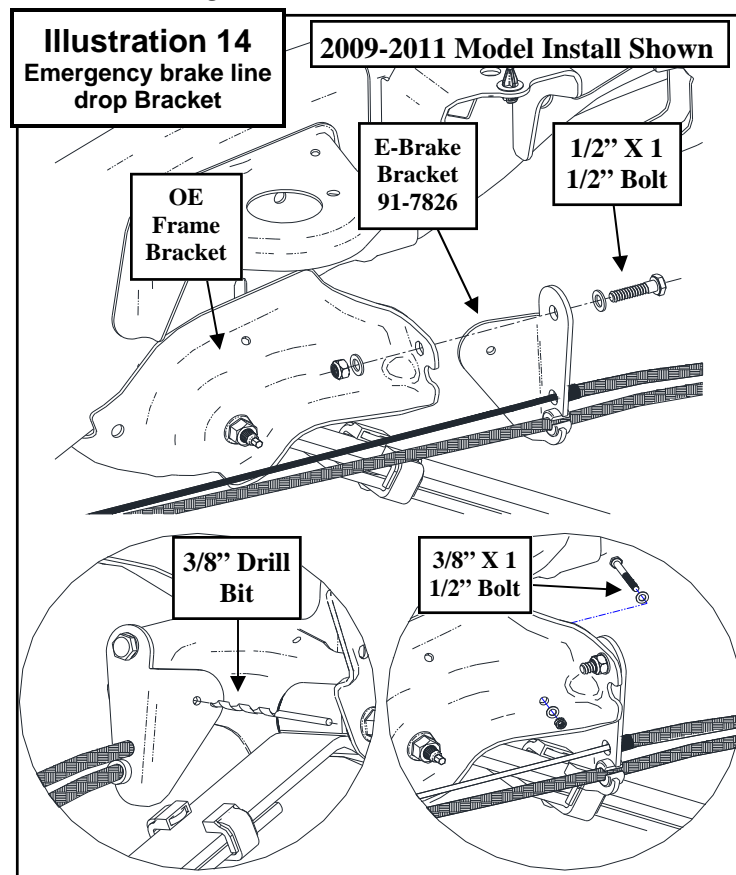
Rear Installation:

1. Block the front tires and raise the rear of the vehicle. Support the frame with jack stands forward of the rear springs.
2. Remove the rear wheels.
3. Remove the shocks on both sides of the vehicle. It may be necessary that you slightly raise the axle to unload the shocks for removal.
4. On drivers side, unbolt the existing brake line bracket from the frame.
5. Install the supplied brake line extension bracket (**90-5502**) to the frame using the previously removed **OE** hardware. Then bolt the factory bracket to the new bracket using the supplied **5/16" X 1"** hardware from hardware pack (**90-6314**).
6. Reroute rear ABS as necessary use the supplies zip ties to secure lines.
7. Unhook the emergency brake cable and remove from **OE** metal wire clip by pinching the tangs on the line.
8. Bolt the supplied emergency brake bracket (**91-7826**) to the **OE** emergency brake frame bracket using the supplied **1/2" X 1 1/2"** Bolt. See **Illustration 14**.
9. Use the inside hole in the emergency brake bracket as a guide for drilling through the frame. See **Illustration 14**.
10. Center punch and drill the holes using a **3/8"** drill bit. See **Illustration 14**.
11. Secure the emergency brake bracket (**91-7826**) to the frame using the **3/8" X 1 1/2"** bolt. See **Illustration 14**.
12. Slip the cable through new bracket (**91-7826**) and re-connect the emergency brake cable.

NOTE: 2012-Up models will reuse the previously removed OE metal wire

clip and OE bolt to secure the emergency brake cables to the new bracket.

13. Support the rear axle with a floor jack and remove the **U-bolts** on the driver side. Loosen the **U-bolts** on the passenger side.
14. Remove the factory lift block from the spring assembly. This will not be reinstalled.
15. Install the lift block (**95-204F**) onto the axle pad, making sure the pins are fitted into the holes on the spring perch. Use your floor jack to raise the axle to the spring making sure the tabs on the spring block fit into the holes on the lift block. See **Illustration 15**.
16. Secure the assembly with the U-bolts (**13-90385**) supplied in hardware pack and new high-nuts and washers from



hardware pack (20-65302). Do not tighten the **U-bolts** at this time. See **Illustration 15**.

NOTE: Make sure the block sits flush on the axle perch.

17. Repeat the installation on the other side of the vehicle.

18. When the installation of the remaining side is complete, torque the **U-bolts** to **105** ft. lbs.

19. Remove the factory bump stops from the vehicle. Save the bolts for reinstallation.

20. Assemble the bump stop drop halves (PN 91-5774) and install the **OE** bump stops to the bump stop drop assemblies using the supplied **3/8" X 1 1/2"** bolts. See **Illustration 16**.

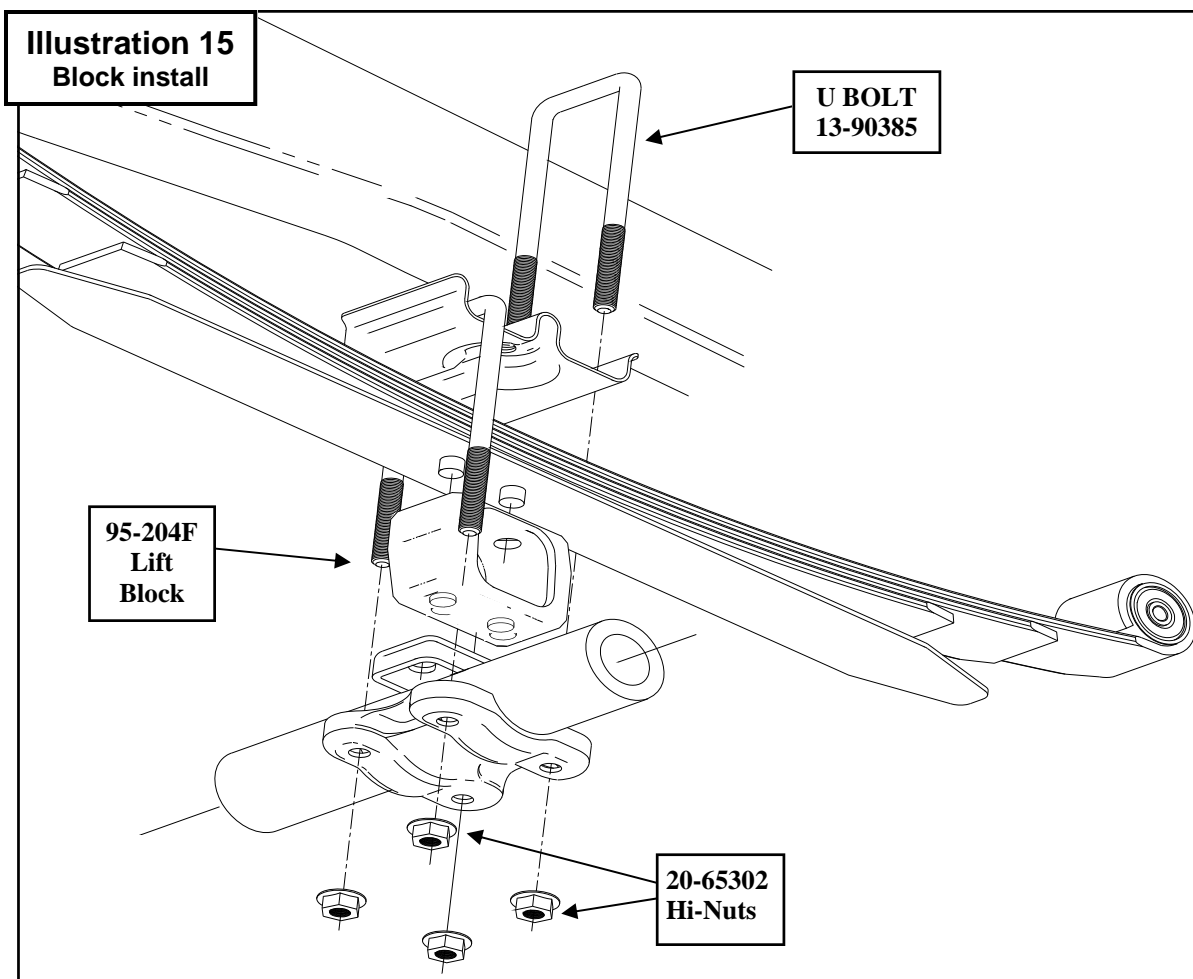
NOTE: Be sure that the pins on the OE bump stops fit into the holes in the bump stop drop assemblies.

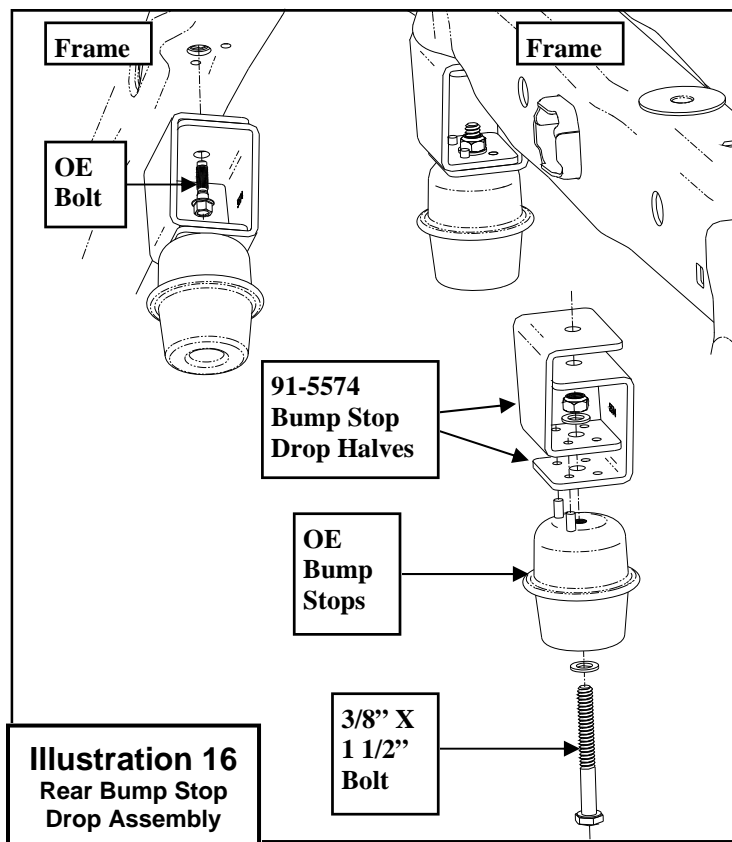
21. Install the bump stop drop assemblies (PN 91-5774) to the frame using the previously removed **OE** bolts. See **Illustration 16**.

22. Insert the supplied sleeves (60859) in both end of the shocks.

23. Install your new Pro Comp shocks (MX6166, ZX2042 or 932008 w/ shaft end up) and torque this hardware to **66** ft./lbs.

24. Reinstall the wheels and tires and lower the vehicle to the ground. Torque the factory wheels to **150** ft/lbs. If you are using aftermarket wheels follow the manufacturers recommended specifica-





tions.

NOTE: If you wish to raise the ride height of the rear of the vehicle, Install the rear leaf spring shims from hardware pack (90-6703) using the enclosed instructions.

25. Recheck all hardware for proper installation and torque at this time.

NOTES:

- ⇒ **On completion of the installation, have the suspension and headlights re-aligned.**
- ⇒ **After 100 miles recheck for proper torque on all newly installed hardware.**
- ⇒ **Recheck all hardware for tightness after off road use.**

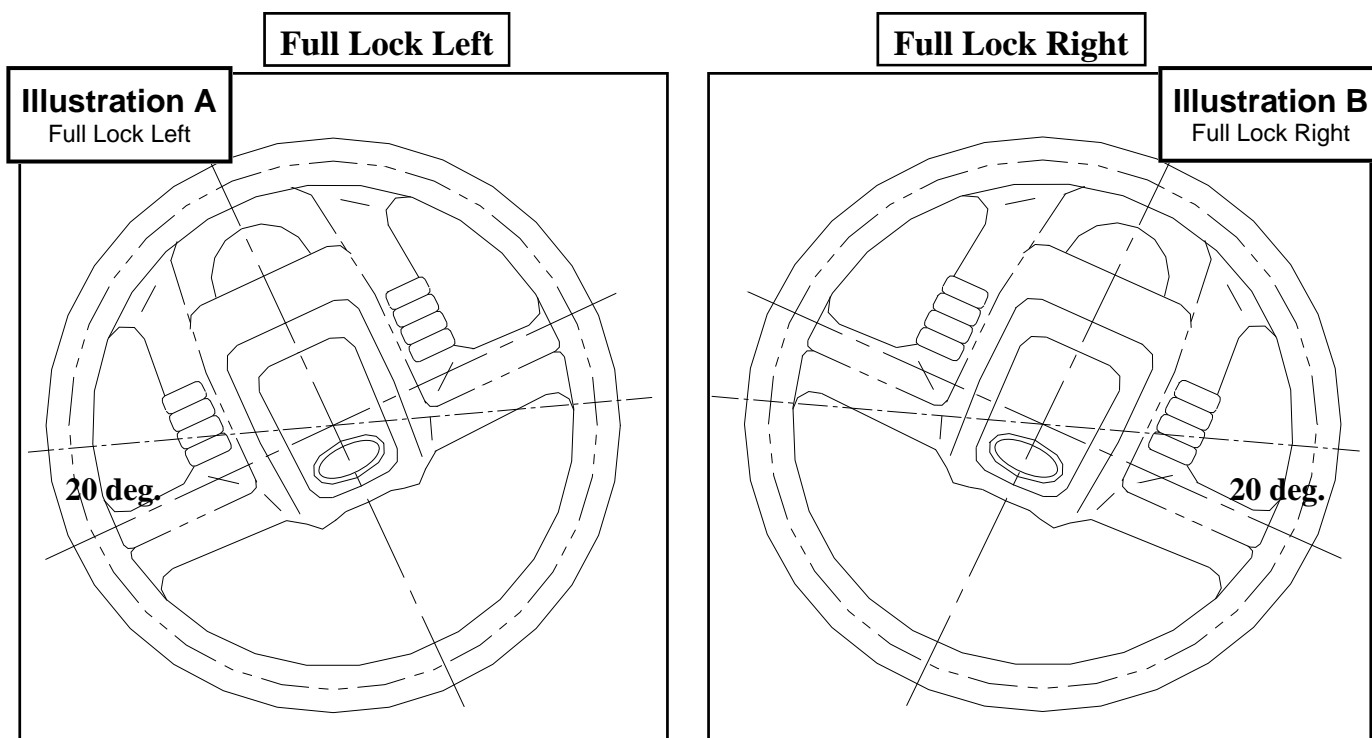


PRO COMP SUSPENSION

Suspension Systems that Work!

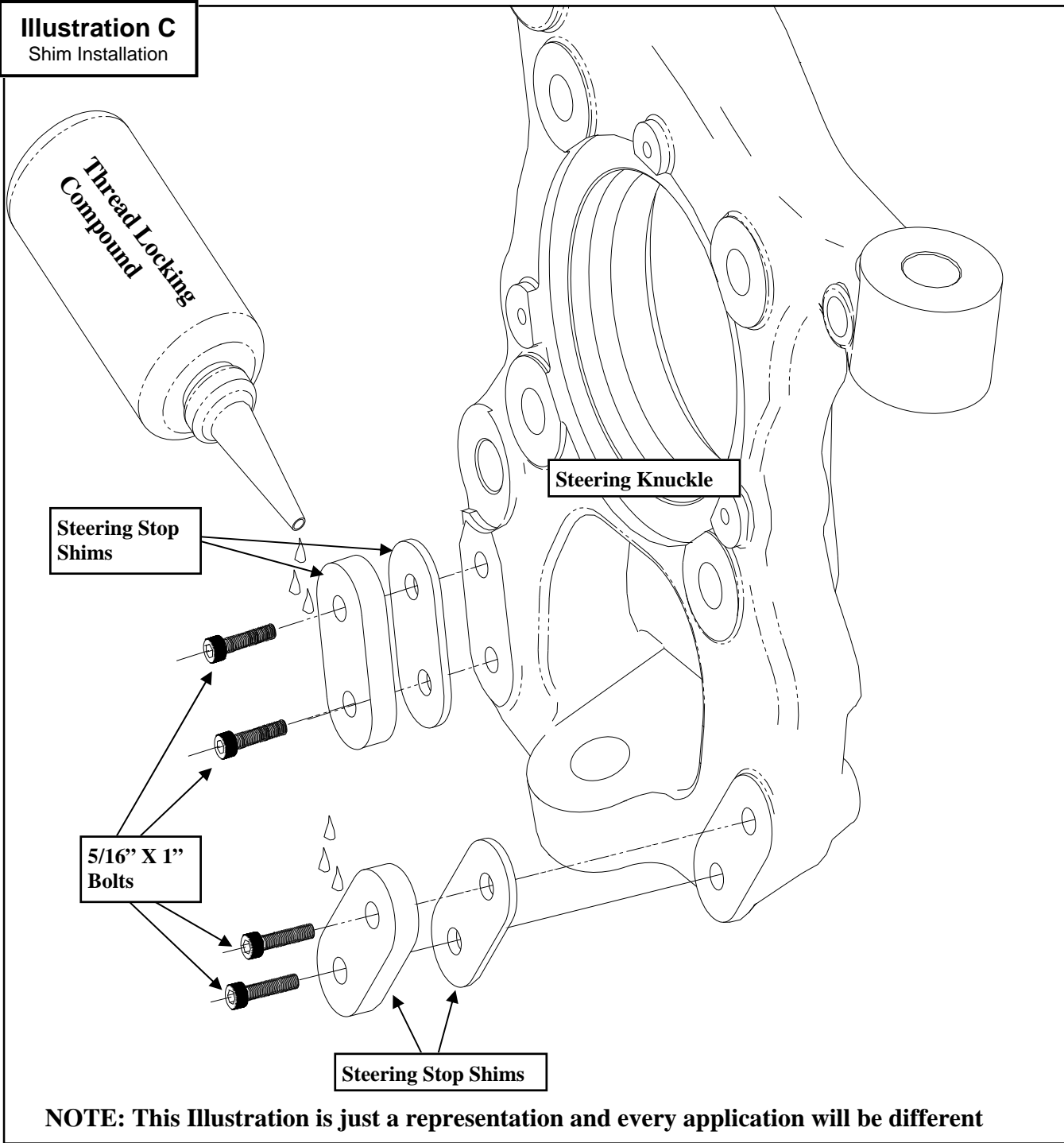
Steering Stop Shim Adjustment Instructions:

1. After having the vehicle properly aligned by a qualified alignment shop, ensure that your work space is of adequate size and the work surface is level. Place the vehicle in park and set parking brake. Place blocks both in front of and behind the rear wheels.
2. With the vehicle on the ground make sure the steering wheel and the tires are straight.
3. Turn the steering wheel to full lock left and remove the appropriate shims from the passenger side front stop and the driver side rear stop until the steering wheel at full lock is in the same position as **Illustration A**.
4. Turn the steering wheel to full lock right and remove the appropriate shims from the driver side front stop and the passenger side rear stop until the steering wheel at full lock is in the same position as **Illustration B**.
5. Be sure to use thread locking compound on the 5/16" X 1" shim retaining bolts. See **Illustration C**.



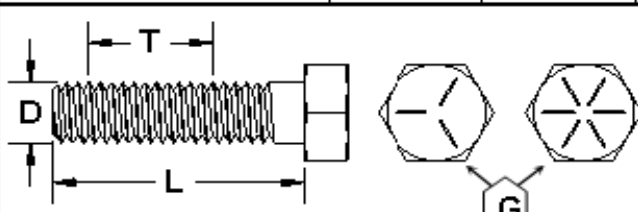
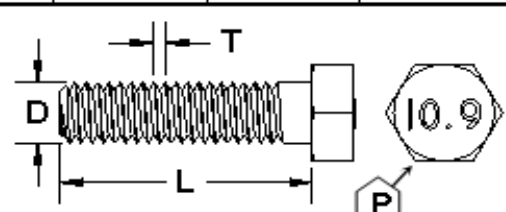
IMPORTANT!: Any more steering angle than shown in the illustrations may result in CV failure.

Illustration C
Shim Installation



Use this only as a guide for hardware without a called out torque specification in the instruction manual.

Bolt Torque and ID						
Decimal System			Metric System			
All Torques in Ft. Lbs. Maximums						
Bolt Size	Grade 5	Grade 8	Bolt Size	Class 9.8	Class 10.9	Class 12.9
5/16	15	20	M6	5	9	12
3/8	30	45	M8	18	23	27
7/16	45	60	M10	32	45	50
1/2	65	90	M12	55	75	90
9/16	95	130	M14	85	120	145
5/8	135	175	M16	130	165	210
3/4	185	280	M18	170	240	290

 <p>1/2-13x1.75 HHCS Grade 5 Grade 8 (No. of Marks + 2)</p> <p>D T L X</p> <p>G = Grade (Bolt Strength) D = Nominal Diameter (Inches) T = Thread Count (Threads per Inch) L = Length (Inches) X = Description (Hex Head Cap Screw)</p>	 <p>M12-1.25x50 HHCS</p> <p>D T L X</p> <p>P = Property Class (Bolt Strength) D = Nominal Diameter (Millimeters) T = Thread Pitch (Thread Width, mm) L = Length (Millimeters) X = Description (Hex Head Cap Screw)</p>
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Revision Page:



The PRO COMP PROMISE WARRANTY

At Pro Comp, we know you have many choices when selecting products to personalize your vehicle. You should demand nothing but the highest quality available and have total confidence that the products you selected are the best in the industry. It is for these reasons that Pro Comp Suspension products are backed by the best warranty in the industry...the Pro Comp Promise!

Pro Comp promises that its products will last a lifetime or we will replace it free of charge. It's that simple! Because of our commitment to quality and manufacturing excellence, we are able to stand behind our products. FOREVER.

It is Pro Comp's Promise that if one of our suspension products breaks not due to misuse, neglect or vandalism, we will replace it. Whether you are the original purchaser or not, you can be assured that we will make it right. The Pro Comp Promise covers all suspension products including shocks and steering stabilizers. Buy Pro Comp Suspension today and enjoy it for the rest of your life!

That's our Pro Comp Promise!

Notice to Owner, Operator, Dealer and Installer:

Vehicles that have been enhanced for off-road performance often have unique handling characteristics due to the higher center of gravity and larger tires. This vehicle may handle, react and stop differently than many passenger cars or unmodified vehicles, both on and off-road. You must drive your vehicle safely! Extreme care should always be taken to prevent vehicle rollover or loss of control, which can result in serious injury or even death. Always avoid sudden sharp turns or abrupt maneuvers and allow more time and distance for braking! Pro Comp reminds you to fasten your seat belts at all times and reduce speed! We will gladly answer any questions concerning the design, function, maintenance and correct use of our products.

Please make sure that the Dealer / Installer explains and delivers all warning notices, warranty forms and instruction sheets included with Pro Comp product.

Warranty and Return Policy:

Pro Comp warrants its full line of products to be free from defects in workmanship and materials for the life of the product. Pro Comp's obligation under this warranty is limited to repair or replacement, at Pro Comp's option, of the defective product. Any and all costs of removal, installation, freight or incidental or consequential damages are expressly excluded from this warranty. Pro Comp is not responsible for damages and / or warranty of other vehicle parts related or non-related to the installation of Pro Comp product. A consumer who makes the decision to modify his vehicle with aftermarket components of any kind will assume all risk and responsibility for potential damages incurred as a result of their chosen modifications. Warranty coverage does not include consumer opinions regarding ride comfort, fitment and design. Warranty claims can be made directly with Pro Comp or at any factory authorized Pro Comp dealer.

IMPORTANT! To validate the warranty on this purchase please be sure to mail in the warranty card.

Claims not covered under warranty

* Parts subject to normal wear; this includes bushings, bump stops, ball joints, tie rod ends and heim joints.

* Finish after 90 days.

* Damage caused as a result of not following recommendations or requirements called out in the installation manuals.

Pro Comp MX Series coil-over shocks are considered a serviceable shock with a one-year warranty against leakage only. Rebuild service and replacement parts will be available and sold separately by Pro Comp. Contact Pro Comp for specific service charges. Pro Comp accepts no responsibility for any altered product, improper installation, lack of or improper maintenance or improper use of our products.

E-Mail: info@procompusa.com
Website: www.procompusa.com
Fax: (310) 747-3912
Ph: 1-800-776-0767

PLACE
WARRANTY REGISTRATION
NUMBER
HERE: _____