ATTENTION

RAM AIR RIDE SYSTEM WARNING

Due to the complexity of the Ram's factory air ride system, we highly recommend using only an experienced suspension specialist for installation. BDS is not liable for any costs associated with problems resulting from improper installation of this system.

All pressurized air suspension components contain high pressure air (up to 220 psi). Extreme caution must be used during the installation of this system to prevent component damage or personal injury.

Failure to disable the air suspension system prior to installation can result in excessive leakage from the system and damage to the air compressor assembly.

Failure to prevent and check for leaks or restrictions in the air line connections can result in damage to the air system compressor, and set error codes, and lock the ASCM. Only the RAM dealership has the ability to access and reset the ASCM. The recharging of the system may also be required as well as in depth diagnostics and recalibration of the system to restore proper function.

BDS lists an estimated installation time of 10 hours for the basic installation of this system. This doesn't include time for diagnostics and repair that could result from a leaking fitting or other problem associated with the installation. BDS will not cover any costs associated the labor required to correct the system.

REAR AIR BAG INSTALLATION WARNING

Extreme care must be taken to follow the steps of these instructions to prevent damage to the rear air bags during the installation and filling process. Costly replacement air bags and a trip to a RAM dealer for diagnostics and system fill may be required if leaks are present or the air bags are not installed according to these instructions.

BDS is not liable for damaged air bags or personal injury as a result of improper installation.

INSTALLATION GUIDE

Part#: 022308

HARDCORE LIMITED LIFETIME WARRANTY

4" High Clearance Suspension System

Dodge Ram 1500 Air Ride 4WD | 2019

Rev. 100219

491 W. Garfield Ave., Coldwater, MI 49036 • Phone: 517-279-2135
E-mail: tech-bds@ridefox.com

Read And Understand All Instructions And Warnings Prior To Installation Of System And Operation Of Vehicle.

THANK YOU

Your truck is about to be fitted with the best suspension system on the market today. That means you will be driving the baddest looking truck in the neighborhood, and you'll have the warranty to ensure that it stays that way for years to come. Thank you for choosing BDS Suspension!

BEFORE YOU START

BDS Suspension Co. recommends this system be installed by a professional technician. In addition to these instructions, professional knowledge of disassembly/ reassembly procedures and post installation checks must be known.

FOR YOUR SAFETY

Certain BDS Suspension products are intended to improve off-road performance. Modifying your vehicle for off-road use may result in the vehicle handling differently than a factory equipped vehicle. Extreme care must be used to prevent loss of control or vehicle rollover. Failure to drive your modified vehicle safely may result in serious injury or death. BDS Suspension Co. does not recommend the combined use of suspension lifts, body lifts, or other lifting devices. You should never operate your modified vehicle under the influence of alcohol or drugs. Always drive your modified vehicle at reduced speeds to ensure your ability to control your vehicle under all driving conditions. Always wear your seat belt.

BEFORE INSTALLATION

- Special literature required: OE Service Manual for model/year of vehicle. Refer to manual for proper disassembly/reassembly procedures of OE and related components.
- Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE manual.
- Larger rim and tire combinations may increase leverage on suspension, steering, and related components. When selecting combinations larger than OE, consider the additional stress you could be inducing on the OE and related components.
- Post suspension system vehicles may experience drive line vibrations. Angles may require tuning, slider on shaft may require replacement, shafts may need to be lengthened or trued, and U-joints may need to be replaced.
- Secure and properly block vehicle prior to installation of BDS Suspension components. Always wear safety glasses when using power tools.
- If installation is to be performed without a hoist, BDS Suspension Co. recommends rear alterations first.
- Due to payload options and initial ride height variances, the amount of lift is a base figure. Final ride height dimensions may vary in accordance to original vehicle attitude. Always measure the attitude prior to beginning installation.

TIRES AND WHEELS

4" Lift

35x12.50 on17x9 with 4-1/2" backspacing
35x12.50 on 18 or 20x9 with 5" backspacing

Stock 17" and 18" wheels cannot be re-installed.
Stock 20" can only be re-installed with the factory tire.

BEFORE YOU DRIVE

Check all fasteners for proper torque. Check to ensure for adequate clearance between all rotating, mobile, fixed, and heated members. Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness. Check steering gear for clearance. Test and inspect brake system.

Perform steering sweep to ensure front brake hoses have adequate slack and do not contact any rotating, mobile or heated members. Inspect rear brake hoses at full extension for adequate slack. Failure to perform hose check/ replacement may result in component failure. Longer replacement hoses, if needed can be purchased from a local parts supplier.

Perform head light check and adjustment.

Re-torque all fasteners after 500 miles. Always inspect fasteners and components during routine servicing.

CONTENTS OF YOUR KIT

022640 & 022641 Box Kit		
Part #	Qty	Description
03794	1	Steering Knuckle - DS
03795	1	Steering Knuckle - PS
401-2038	2	Tie Rod End

022635 Box Kit		
A341	1	Sway Bar Drop Bracket DRV
A342	1	Sway Bar Drop Bracket PASS
01295B	1	Front Crossmember
03658	1	Diff Drop Bracket PASS
03656	1	Diff Drop Bracket Inner Drv
03655	1	Diff Drop Bracket Outer Drv
03661	1	Diff Drop Bracket Rear

022308 Box Kit		
Part #	Qty	Description
SB58BK	4	5/8" Hourglass Bushing
62147	2	.625 OD x .075" Wall x 1.375" Sleeve
45313	2	.625 OD x .109" Wall x 1.375 Sleeve
SV203	4	Air Fittings
02776	2	4" Front Strut Spacer
03793	2	3" Air Ride Rear Spacer
911103	2	Sway Bar End Link
482	1	Bolt Pack- Sway Bar Hardware
	2	12mm x 60mm Bolt
	4	7/16" USS Washer
	2	12mm-1.75 Prevailing Torque Nut
	2	3/8" USS Washer
457	1	Bolt Pack- Rear Spacer, Air Line Fittings
	6	5/16 Nylock Nut
	6	1/4" USS Washer
	2	6mm 90 degree push connect air fitting
	2	6mm striaght push connect air fitting
	4	6mm x 3-1/2" black nylon tubing

022634 Box Kit		
Part #	Qty	Description
03657	1	Drive Shaft Spacer
01296B	1	Rear Crossmember
01298B	1	Front Differential Skid Plate
478	1	Bolt Pack - Drive Shaft Hardware
	4	12mm x 55mm Bolt
	4	12mm Flat Washer
480	1	Bolt Pack- Differential Bracket Mount Hardware
	3	12mm-1.75 x 40mm bolt
	2	12mm-1.75 x 60mm bolt
	2	12mm-1.75 x 55mm bolt
	11	12mm Flat Washer
	4	12mm-1.75 Prevailing Torque Nut
	3	1/2"-13 x 1-1/2" Bolt
	4	1/2"-13 x 1-1/4" Bolt
	3	1/2"-13 Prevailing Torque Nut
	10	1/2" SAE Washer
481	1	Bolt Pack, Brake Line, Upper Strut and Sway Bar Mount Hardware
	2	1/4"-20 x 3/4" bolt c
	2	1/4" Split Lock Washer c
	4	1/4" SAE flat washer
	4	Wire Clip
	6	10mm-1.50 Prevailing torque nut
	6	10mm flat washer
	2	1/2"-13 x 1-1/4" bolt
	2	1/2"-13 prevailing torque nut
	4	1/2" SAE flat washer
	4	3/8"-16 Prevailing torque nut
	8	3/8" SAE washer
	4	3/8"-16 x 1-1/4" Bolt
02002ZP	4	M18-2.5 x 150mm Bolt
N18MPT	4	M18-2.5 Prevailing Torque Nut
01264	6	Square Washer
01499	4	1/4" Washer
0342701	1	Locktite
22531	2	Front Brake Lines
5188	2	Brake Line Clip
CCW-03-050	4	3/8 Brake Line Crush Washer
099000	6	Zip Ties
03704	1	Brake Line Drop Bracket - DRV
03705	1	Brake Line Drop Bracket - PASS

Box Kit		
Part #	Qty	Description
109	1	1.00" OD x .125" Wall x 1.36" Sleeve
110	2	1.00"OD x .125" Wall x 2.375" Sleeve
SBLA	2	Brake Adapters
03681	2	Bump Stop Extension
03796	1	Upper Control Arm Relocation Brkt DRV
03797	1	Upper Control Arm Relocation Brkt PASS
03682	1	Rear Track Bar Bracket
03719	1	Bump Stop Nut Tab
479	1	Bolt Pack- Bump Stop Extension Hardware
	4	5/16"-18 x 7/8" bolt
	6	5/16" SAE washers
	2	5/16"-18 Prevailing Torque Nut
483	1	Bolt Pack - Rear Hardware
	1	9/16"-12 x 3-1/2" bolt
	1	9/16"-12 Prevailing torque nut
	2	9/16" SAE washer
	2	5/8"-11 x 4-1/2" bolt
	2	5/8"-11 Prevailing torque nut
	4	5/8" SAE washer
	6	3/8"-16 x 1-1/4" Bolt
	6	3/8"-16 Prevailing torque nut
	16	3/8" SAE washer
	2	3/8"-16 x 1" Bolt

TROUBLESHOOTING INFORMATION FOR YOUR VEHICLE

TECH TIPS

1. Fits factory air ride equipped trucks only.
2. The factory air ride is a closed loop system. Opening the system more times than recommended in the lift instructions will require the system to be recharged. This can be done at any Ram dealer service department. A scan tool is needed to access the air control module to perform the service.
3. Due to the complexity of your Ram's factory air ride system, we highly recommend using an experienced suspension specialist for installation.

INSTALLATION INSTRUCTIONS

PRE-INSTALLATION MEASUREMENTS

Measure from the center of the wheel up to the bottom edge of the wheel opening

LF_____ RF_____ LR_____ RR_____

SPECIAL TOOLS

35mm Socket (Hub nut)

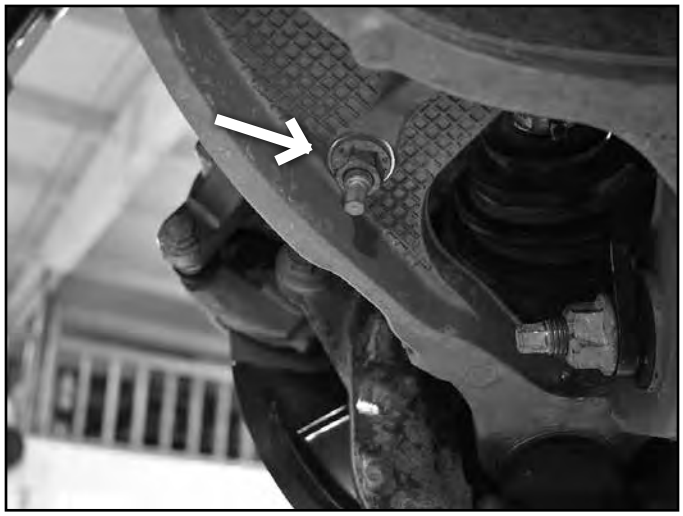
PRE-INSTALLATION NOTE

1. Extreme care must be taken to follow the steps of these instructions to prevent any leaks or damage to the air bags during the installation process. Costly replacement air bags or a trip to a Ram dealer for diagnostics may be required if leaks are present or the air bags are not installed according to these instructions.

FRONT INSTALLATION

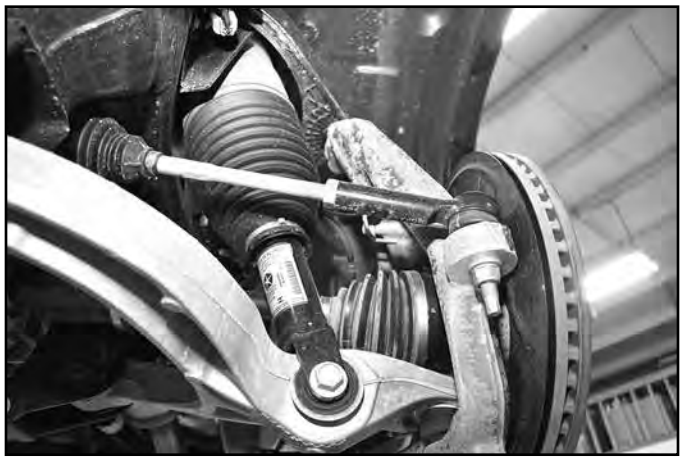
2. Park the vehicle on a clean, flat surface and block the rear wheels for safety.
3. Turn off the air ride using through the vehicles control panel: Uconnect>settings>suspension>tire jack mode.
4. Disconnect the battery.
5. Raise the front of the vehicle and support with jack stands under the frame rails.
6. Remove the wheels.
7. Disconnect the sway bar links from the lower control arms. Leave them attached to the swau bar (Fig 1).

FIGURE 1



8. Remove and discard the OE front skid plate, if equipped.
9. Disconnect the tie rod ends from the steering knuckles. Remove the jam nuts. Use the appropriate puller to separate the tie rod end from the steering knuckle. (Fig 2)

FIGURE 2



10. Disconnect the ABS brake line at the frame. Remove it from the retaining clips.
11. Disconnect the driver's side front brake hose from the caliper. Retain the banjo bolt and discard the crush washers.
12. Disconnect the hard line from the brake hose fitting at the frame. Remove the hose fitting retaining bolt and remove the hose from the vehicle.
13. Attach the provided brake line relocation bracket (03704(DRV)/ 03705(PASS)) to the frame where the original line mounted. Fasten the bracket with the OE fitting bolt through the original threaded hole and the corresponding small hole in the new bracket . Align the other mounting hole in the bracket with the brake line hole in the frame and fasten with a ½" x 1-1/4" bolt, nut and ½" SAE washers (BP #481). Torque the OE bolt to 10 ft-lbs and the ½" bolt to 50 ft-lbs. Note: The third hole in the bracket should be hanging out past the edge of the frame. (Fig. 3)

FIGURE 3

14. Route the new stainless steel brake line though the relocation bracket and attach it to the hard line. Tighten the fitting securely. Fasten the line to the bracket with the provided retaining clip. (Fig. 3)
15. Attach the opposite end of the new brake line to the caliper with the OE banjo bolt and one new crush washer on each side of the fitting. Torque the banjo bolt to 18 ft-lbs.
16. Repeat brake line installation on the passenger's side of the vehicle.
17. Remove the brake caliper anchor bracket bolts and pull the caliper free from the steering knuckle and rotor. Hang the caliper securely out of the way. Retain caliper mounting hardware.

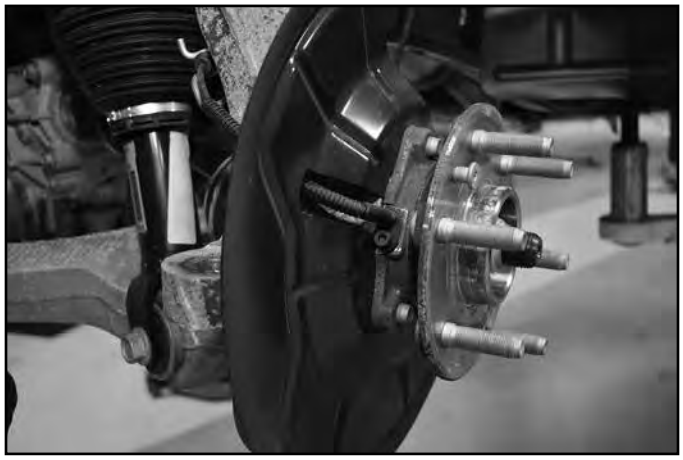
Tip *Do not allow the brake caliper to hang from the brake hose.*

18. Carefully remove height adjustment sensor linkage from upper control arm using appropriate pry bar. (Fig. 4)

FIGURE 4

19. Remove the brake rotor torx screw from the hub using a T30 Torx bit. Remove brake rotor from the hub.
20. Remove ABS Sensor from outer hub (Fig. 5) Route ABS line behind the rotor dust shield , remove from remaining abs clip and remove from vehicle.

FIGURE 5



21. Remove the hub axle nut using a 35mm socket. Retain nut.
22. Loosen but do not remove the lower control arm bolts.
23. Disconnect the CV axles from the differential by carefully prying or tapping on the CV at the differential to disengage the internal retaining clip. Pry the shaft out just enough to release the clip and leave the axle on the differential at this time.
24. Support the lower control arm with a hydraulic jack. First remove the air line by loosening up the upper air line fitting, followed by removing the three air spring to frame mounting nuts (Fig. 6).

FIGURE 6

25. Loosen the air spring-to-lower control arm hardware. Remove the nut from the bolt and leave the bolt in place to temporarily retain the air spring to the lower control arm. Retain the nut.
26. Remove the upper and lower ball joint nuts. Reinstall the nuts a few turns by hand. Separate the upper and lower ball joints from the steering knuckle using the appropriate puller. Take care not to damage the ball joint.
27. Remove the upper ball joint nut. Lower the jack enough to allow removal of the air spring and shock assembly. Remove the lower mounting bolt and remove the air spring from the vehicle. Mark the air bag from the appropriate side (driver's or passenger's). Retain mounting bolt and upper ball joint nut.
28. Continue to lower the jack allowing the knuckle, CV axle and lower control arm to swing down. Slide the CV axle off of the differential. Remove the CV axle from hub.
29. Remove the lower ball joint nut and remove the knuckle from the lower control arm. Retain the lower ball joint nut.
30. Repeat the knuckle removal process on the other side.
31. Remove the three bolts mounting the hub bearing assembly to the OE steering knuckles. Retain the mounting bolts. Remove the hub assembly and dust shield from the knuckle.

FIGURE 7

32. Remove the lower control arms from the frame. Retain hardware.
33. Make indexing marks on the front drive shaft and differential input flange for realignment later (Figure 7). Remove the four bolts and disconnect the drive shaft from the differential. Support the driveshaft to keep the CV boot from binding. Discard mounting bolts.

Tip *Failure to support the driveshaft can lead to pinching the rubber boot at the CV joint which can damage the seal causing a leak and premature wear on the joint.*

34. Remove sway bar mounts from frame and remove sway bar assembly. Retain Hardware.
35. Remove the four bolts mounting the OE rear crossmember (Fig. 8) to the frame rails and remove the crossmember from the vehicle. Discard the crossmember and the hardware.

FIGURE 8

36. Using a jack, support the differential. Loosen and remove the two forward-most differential mounting bolts on the driver's side (Fig. 9) you may need to manipulate the wiring harness location in order to give enough clearance for these bolts to come loose.

Tip *If using a ratcheting wrench, make sure it is reversible as you may get into a position where it gets stuck on the rib of the differential.*

FIGURE 9

37. Loosen but do not remove the three rear driver's side bolts (Fig. 10) and the two passenger's side bolts (Fig. 11). On the passenger's side, if equipped, remove the differential actuator cable bracket, It will not be reused. Disconnect the wiring connector from the differential.

FIGURE 10

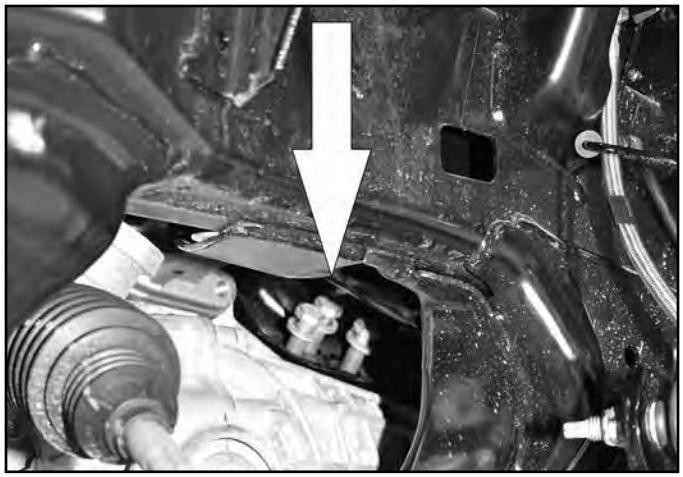
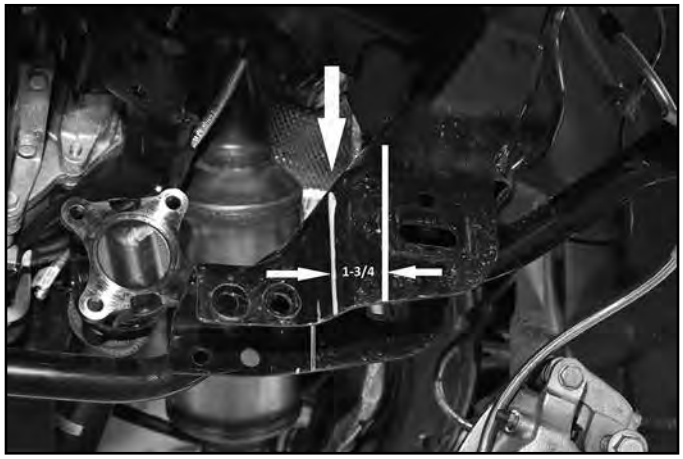


FIGURE 11

38. With the differential securely supported, remove the remaining bolts and lower the differential from the vehicle.
39. The driver's side rear lower control arm pocket must be trimmed to provide clearance for the differential in its lowered position. Measure inward from the inside edge of the alignment cam slot 1-3/4" and mark. Repeat on the opposite side of the pocket. Make a continuous line connecting the two marks over the top edge of the pocket. Trim the pocket on the line with a sawzall or cut off wheel. Paint any exposed metal to prevent corrosion (Fig. 12A).

FIGURE 12A



40. Cut the rear passenger side as shown in Fig. 12B. Mark 3" from inside edge, cut up to bend in stamped bracket and then cut straight out perpendicular to the angled surface. Cut using a sawsall or equivalent. Paint exposed metal to prevent corrosion.

FIGURE 12B

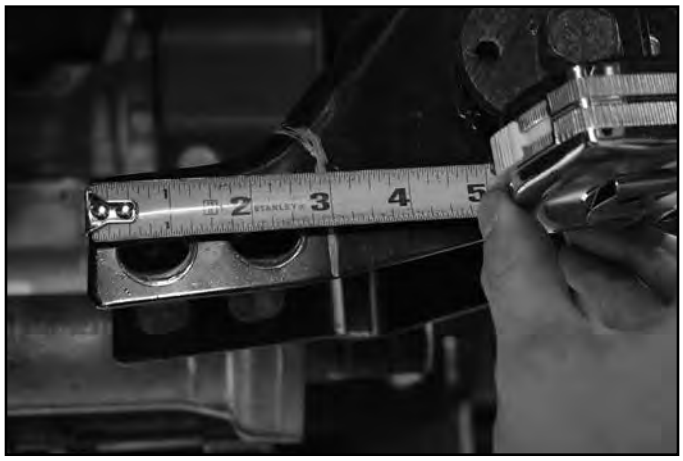


FIGURE 12C

41. Install the provided passenger's side differential drop bracket (03658) to the original frame mount with OE hardware. The brackets should be installed offset forward as shown (Fig. 13). Leave hardware loose.

FIGURE 13

42. Install the two front driver's side front differential drop brackets so that the bracket without the lower cutout (03655) is toward the outside of the vehicle (offsetting out) and the one with the cutout (03656) is on the inside (offsetting in). Fasten the brackets to the frame with OE bolts with loctite into the factory threaded holes. Leave hardware loose. (Fig. 14)

FIGURE 14

43. Install the driver's side rear differential drop bracket (03661) to the OE mount location with three 1/2" x 1-1/2" bolts and ½" SAE washers (BP #480). (Fig. 15) The bracket will have the gusset plate towards the front of the vehicle. Leave hardware loose.

FIGURE 15

44. Using a jack (and an assistant to aid in balancing) raise the differential up to the new brackets.
45. Attach the differential to the driver's side front bracket and passenger's side bracket with 12mm x 60mm bolts, nuts and washers (BP #480). Use the 1/4" washers (01499) on both sides of the differential and between the front diff brackets. (Fig.16 & 17)

FIGURE 16

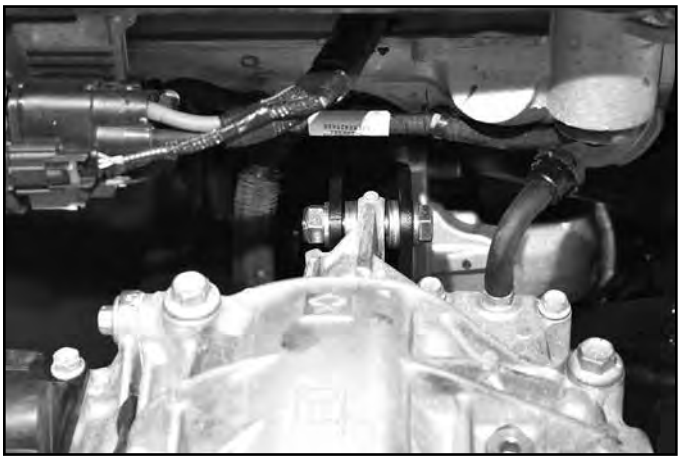


FIGURE 17

46. Attach the drivers side rear bracket to the differential with 12mm x 40mm bolts and washers (BP #480). Leave all differential hardware loose. (Fig. 18).

FIGURE 18

47. Attach the Passenger side differential to the bracket using 12mm x 60mm bolts and washers. (BP 480) (Fig. 19)

FIGURE 19

48. Torque all 14 differential mounting bolts. Torque the ½" hardware to 65 ft-lbs and the 12mm hardware to 50 ft-lbs.
49. Locate the front differential wiring harness. Remove from factory clips to give enough slack to reach the differential. Reattach to differential and tie up extra slack with provided zip ties.
50. Install the new front crossmember (01295) in the OE front lower control arm pockets (Fig. 20) and loosely fasten with the provided 18mm x 150mm bolts, nuts in conjunction with the provided rectangle cam slot washers (01264).

    Note: The offset in the crossmember goes to the front, bolts run from front to rear.

FIGURE 20

51. Install Sway Bar drop Brackets using OE hardware in the upper sway bar mounts (03659/03660) Lower tabs on Sway bar mount brackets must go in the rear OE cam slots (Fig. 21).

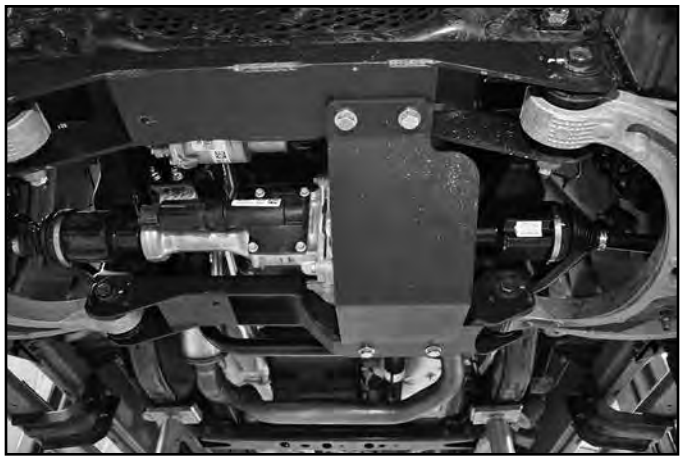
FIGURE 21

52. Install the new rear crossmember (01296B) in the OE rear lower control arm pockets and loosely fasten with the provided 18mm x 150mm bolts, nuts in conjunction with the provided rectangle cam slot washers (01264). Run the bolts from front to rear and leave loose at this time. (Fig. 22)

FIGURE 22

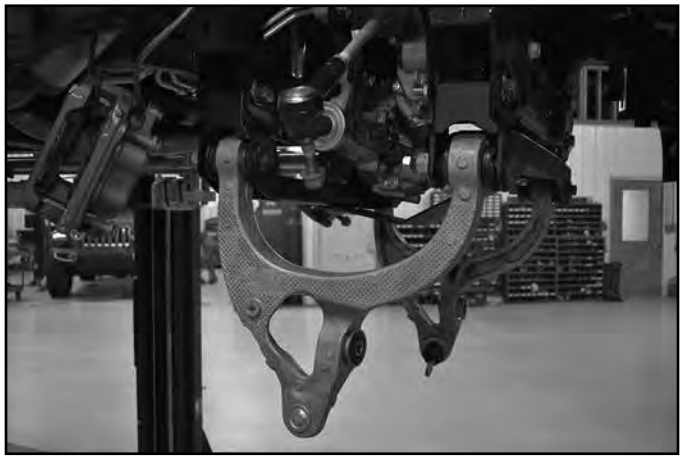
53. Install the new differential skid plate to the front crossmember with ½" x 1-1/4" bolts and ½" SAE washers (BP #480) into the welded nuts in the crossmember. Install the back of the skid plate to the rear crossmember with ½" x 1-1/4" bolts and ½" SAE washers (BP #480) into the welded nuts in the crossmember. Leave hardware loose. (Fig. 23)

FIGURE 23



54. Install the lower control arms in the front and rear crossmembers. Attach the control arms to the crossmembers with the OE cam bolts, washers and nuts running from front to rear. Leave hardware loose. (Fig24)

FIGURE 24



55. With the lower control arms installed, torque the 18mm crossmember mounting bolts to 220 ft-lbs. Torque the ½" differential skid plate hardware to 65 ft-lbs.

56. Install the provided drive shaft spacer (03657) on the differential input flange. Attach the front driveshaft to the differential by aligning the marks made earlier. Fasten the driveshaft and spacer to the differential flange with 12mm x 55mm bolts and 12mm washers (BP #478). Use loctite on the bolt threads and torque to 55 ft-lbs. (Fig. 25)

FIGURE 25

57. On some new vehicles it is necessary to trim a splash guard located on the transmission shift linkage to clear the drive shaft. (Fig. 26)

FIGURE 26

58. Install the hubs in the corresponding new knuckles (02230, 02231) and fasten with the stock mounting bolts. Index the hub so that the ABS line runs out the front side of the knuckle toward the steering arm. Use Loctite on the bolt threads and torque to 125 ft-lbs. (Fig 27)

FIGURE 27

FRONT AIR LINE & SPACER INSTALL

59. Remove the factory 90 degree air fitting from the air line using a small screwdriver to release the clips. (Fig 28)

FIGURE 28

60. Remove the white plastic ferrule retainer on the provided fittings located in the rear box kit 022259 (Fig 29). Slide the fitting and ferrule on the end of one of the provided pieces of air line. (Fig 30) Leave approximately 1/16" of air line past the end of the ferrule to ensure it doesn't slide off when installing it into the air bag. Don't leave too much line sticking past the ferrule or it will prevent air flow into the bag.

Tip *If the supplied air lines are slightly crimped at the ends from being cut from the factory, cut off that section with a razor blade with a slight angle to ensure a good seal on the o-rings. There is more than enough length available.*

FIGURE 29

FIGURE 30

Note: The tapered side of the ferrule goes towards the fitting as shown in Figure 30.

61. Attach the new air line to the top of the air spring and repeat the process for the opposite side air bag. Tighten to 44 in-lbs.
62. With the air lines installed, install the front air spring spacers (02776) with the original mounting hardware to the top of the air springs. Torque nuts to 30 ft-lbs. (Fig 31)

FIGURE 31

63. Loosely install the air bag assemblies on the appropriate sides of the truck with the provided 10mm nuts and washers (BP 481) on the spacer studs.
64. Locate the 90 degree push-to connect air line fittings. Slide the OE air line clip down the line enough to clear the fitting and push the fitting on the OE line and to the provided line installed earlier on the air bag.

! Caution ***If the system has a leak, it may require a trip to a Ram dealer to have the system recharged. Use care to prevent any leaks. Verify both ends of the push to connect fittings are secure by pushing it on until it bottoms and then gently pulling to ensure it is sealed. The colored retainers should be pulled all of the way out from the fitting when properly attached.***

65. Install the new driver's side steering knuckle to the driver's side lower control arm ball joint and loosely attach with the original nut. Install the driver's side CV axle in the hub and loosely fasten with the original axle nut. Swing the knuckle/CV assembly up while aligning the axle with the differential output shaft. Loosely attach the strut to the lower control arm with the original hardware. Push the CV axle all the way onto the differential output to seat the internal retaining clip.
66. Support the lower control arm with a hydraulic jack and attach the knuckle to the upper ball joint with the OE nut.
67. Torque the upper ball joint nut to 55 ft-lbs and the lower ball joint nut to 60 ft-lbs. Torque the axle nut to 185 ft-lbs. Torque the upper strut-to-frame nuts to 30 ft-lbs.
68. Repeat knuckle/CV installation on passenger's side.
69. Route ABS line on back side of knuckle, through brake dust shield and into hub. Fasten with stock hardware and locktite.

70. Install the brake rotor and caliper on the knuckle/hub. Torque the OE caliper bolts to 130 ft-lbs. Use loctite on the caliper bolts.

71. Attach sway bar to sway bar extension mounts using 3/8-16" x 1-1/4" bolts, washers and prevailing torque nuts (BP 481) (Fig. 32) insert sway bar link into lower control arms and fasten using OE hardware.

FIGURE 32

72. Remove stock tie rod ends and replace with provided replacement tie rod ends (401-2038). Attach the tie rod ends to the new steering knuckles with the included nut. Torque to 55 ft-lbs. Securely lock off the jam nut. It is recommended to have approximately 2 threads left exposed past the jam nut for ease of alignment adjustment.

73. Reconnect the ABS wires at the frame.

74. Reconnect the height adjustment sensor linkage to upper control arm.

75. Route the brake and ABS lines around the back side of the knuckle. Attach the brake line and ABS wire with 1/4" hardware and clamps bolt pack #481 to the threaded hole in the backside of the steering knuckle. Offset the clamps to the outside and into the inner cavity of the knuckle. Secure the ABS wire with zip ties at other locations to prevent any contact with rotating / moving parts. Ensure there is adequate slack and clearance between the brake line and suspension components. (Figure 33) The Brake line is designed to be tight between the mounting points to ensure there is no interfence with the tire during the full cycle of the suspension

FIGURE 33

76. Reinstall front wheels. Torque to OE specifications, see owner's manual.

77. Lower the vehicle to the ground
78. Center the lower cams and torque lower control arm hardware to 125 ft-lbs. Torque the strut-to-lower control arm bolt to 125 ft-lbs.
79. If the front brakelines were disconnected or replaced, the front brakes must be bled before driving vehicle. Also do a final check to ensure the brake lines will not contact the tire or other moving components.
80. Check all fasteners for proper torque. Recheck all fasteners after 500 miles and at regularly scheduled maintenance intervals.
81. A complete front end alignment is required. Do not drive the vehicle with the steering wheel off center. This can cause unsafe driving conditions.

REAR INSTALLATION INSTRUCTIONS

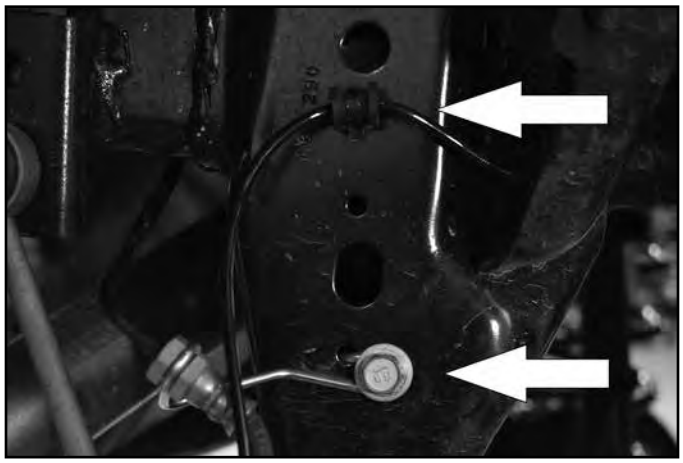
82. Park the vehicle on clean, flat, and level surface. Block the front wheels for safety.
83. Disconnect the rear trackbar from the axle, retain hardware.
84. Raise the rear of the vehicle and support the frame rails with jackstands.
85. Remove the wheels.
86. Support the axle with a hydraulic jack.
87. Remove the screws holding the inner fenders to gain access to the air bag fittings.
88. Using a wrench remove the air by loosening the air line fitting from the rear bags. Once air is released remove fitting from airbag. Release the clips and remove the air bags from the vehicle. (Fig 34)

! Caution ***Use care not to over extend the bags once removed. The best way to ensure the bags do not become unrolled from the ends internally is to release the pressure from the bags with some of the vehicle weight on them. Use care when doing so as the vehicles ride height will suddenly drop. The air lines to the rear can be diconneced first at the distribution block which is on the passenger frame rail or passenger rear corner.***

FIGURE 34

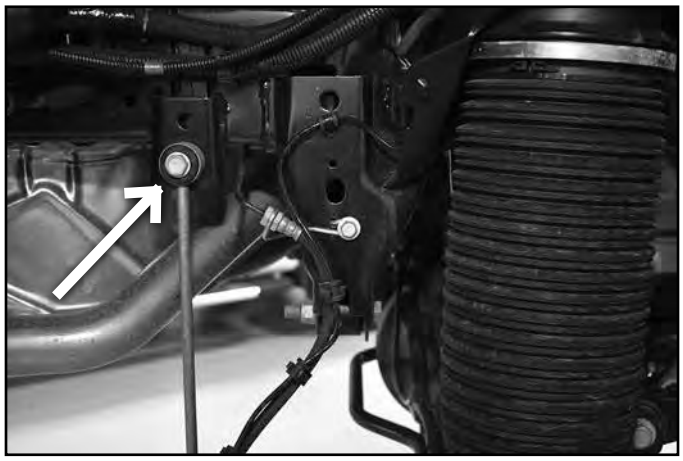
89. With the axle supported, remove the shocks. Retain the mounting hardware.
90. Disconnect brake line brackets from the outside of the frame rails. Remove the ABS wires from the retaining clips. (Fig 35)

FIGURE 35



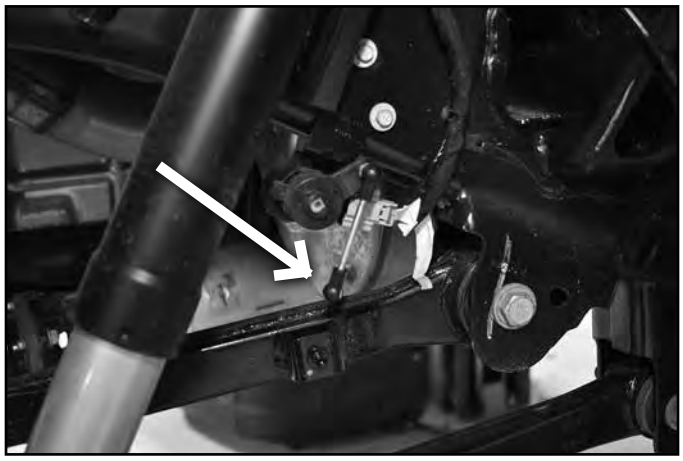
91. Remove rear sway bar links (Fig 36).

FIGURE 36



92. Disconnect the ride height sensors from the upper control arm (Fig 37).

FIGURE 37



93. Disconnect the upper control arm from the axle. Loosen the upper control arm bolt at the frame rail, but do not remove (Figure 38). Retain hardware.

    Note: Do one side at a time or support the front of the axle to prevent the axle from rotating.

FIGURE 38

94. Place the upper control arm relocation bracket over the pocket. The plate will be offset towards the inside of the vehicle. Use the 3/8-16 x 1-1/4" Bolt (BP483) to attach the bracket to the axle. Use the 5/8"-11 x 4-1/2" bolt, Prevailing Torque nuts, and SAE washers in stock control arm mount location (BP483). Use 110 sleeve between bracket tabs at stock mounting location. See Figure 39 and 40.

FIGURE 39

FIGURE 40

95. Install the upper arm with the OE bolt. Leave control arm hardware loose at this time. Tighten 3/8" hardware to 35 ft-lbs, and 5/8" hardware to 95 ft-lbs.

96. Repeat UCA recocation bracket installation on opposite side (Figure 41)

Note: When installing the driverrs side control arm relocation brackets, it may be nessesary to tripm the Fuel tank support bracket. To do so simply remove nessesary material. This should not jeperadize the integrety of the fuel tank support bracket. Paint any exposed metal to prevent corrosion. Reconnect height adjustment sensor links to arms.

FIGURE 41 - DRV. SIDE

REAR AIR BAG INSTALLATION

97. The brass air fittings on the ends of the factory lines will be need to be removed. Gently open the split in the ferrule to release it and slide it off of the air line. It's important to not scratch the OE line so it has a good seal on the provided fittings. If it does get scratched, cut that small section of line off.

FIGURE 42

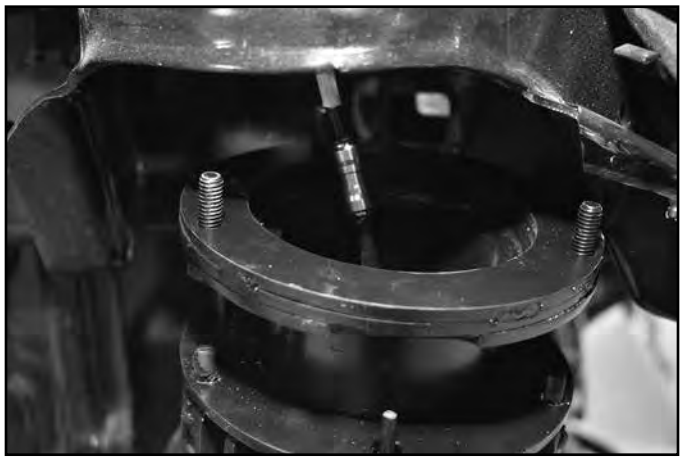
98. Install the provided fitting and ferrule on the end of one of the provided pieces of air line like was done for the front air lines. Attach the new air line to the air bag (Fig 43).

Tip *If the supplied air lines are slightly crimped at the ends from being cut from the factory, cut off that section with a razor blade with a slight angle to ensure a good seal on the o-rings. There is more than enough length available, cut the line to an appropriate length.*

FIGURE 43

99. Drill out the holes in the frame where the stock air bag round locating studs went through using a 3/8" drill.
100. Attach the rear air bag spacers to the frame using the provided 5/16" nuts and washers (BP 457).
101. Install the rear air bags to the spacers. They will clip into place and will only install one way.

FIGURE 44



Caution ***Before filling the air bags, it is important to temporarily remove the gaiter and verify the bag is still folded over BOTH ends. (Fig 45) If the bag has been overextended, the bag will need to be removed and compressed so the bag folds over both ends as shown. Leave gaiters loose so the bags can be checked again before the filling procedure.***

FIGURE 45

Tip *One way of getting the ends of the air bag seated properly is to apply a small amount of air pressure using an air nozzle while simultaneously compressing the bag until the bag folds evenly over both ends. Refer to video linked to the listings for more details.*

102. Locate the straight push to connect air line fittings and connect the factory air line to the provided air line attached to the air bag.

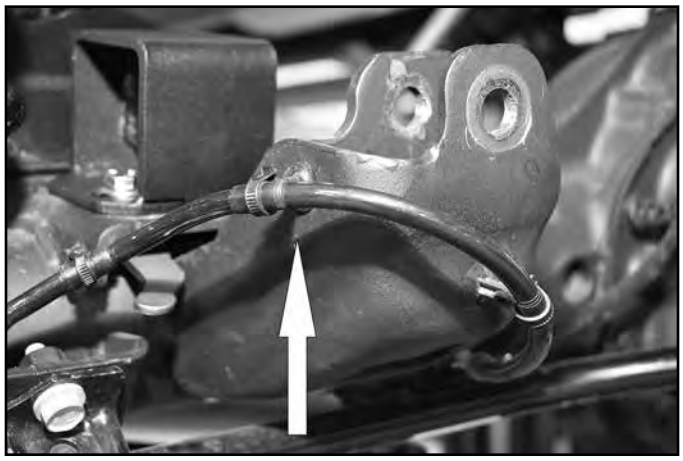
Caution ***If the system has a leak, it may require a trip to a Ram dealer to have the system recharged. Use care to prevent any leaks. Verify both ends of the push to connect fittings are secure by pushing it on until in bottoms and then gently pulling to ensure it is sealed. The colored retainers should be pulled all of the way out from the fitting when properly attached.***

REAR TRACK BAR BRACKET& BUMP STOP EXTENSIONS

103. Install the new rear shocks. Tighten upper hardware so the bushing starts to swell. Tighten lower shock hardware to 75 ft-lbs.
104. Refer to the OE track bar bracket, Remove the ABS clip as shown in Fig. 46 and drill hole so that it fits a 3/8" bolt,

    Note: Due to OEM ABS clip hole variation, drilled hole may need to be filed out into a slot in order to align with bracket.

FIGURE 46

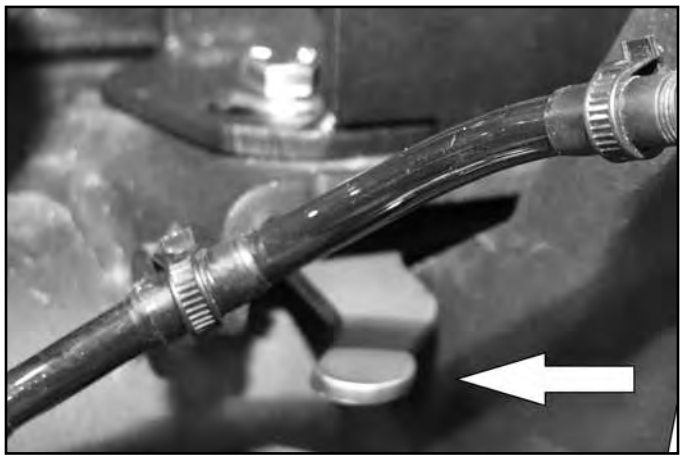


105. Install the track bar bracket back on the factory mount. Fasten with the provided 9/16" hardware through the original track bar hole. Place the provided crush sleeve (109) in the factory bracket when installing the hardware Attach bracket with 3/8" x 1-1/4" bolt, nuts and washers (BP483) through the hole drilled in the previous step. Tighten 3/8" hardware to 35 ft-lbs and 9/16" to 95 ft-lbs. See Fig. 47.

FIGURE 47

106. Attach bump stop extensions (03681) to driver's and passengers's side with 5/16" x 7/8" bolts with prevailing torque nuts and washers (BP 479)) For the drivers side, use nut tab (03719) by sliding it behind OE track bar bracket hardware, under the bump stop plate. See Figure 48. Both bump stop extensions are positioned towards the Drivers side of the vehicle with the two holes in the bottom plate facing the passenger side. Tighten to 18 ft-lbs.

FIGURE 48



107. Install hourglass bushings (SB58BK) into sway bar links. Install one 62147 sleeve into one end of the sway bar and one 45313 sleeve into the other end.

108. Install sway bar links putting the 45313 sleeves to the top mount, fasten using OE hardware and and 3/8" USS washer (BP482). Attach lower sway bar link to sway bar using 12mm bolt, prevailing torque nut and washers (BP482) Tighten to 55 ft-lbs. (Fig. 49). Sway bar links mount to the inside of the bracket, same as the factory sway bar links.
109. Install brakeline drop brackets on the side of the frame rail using OE hardware. Attach brakeline to bracket with ¼" x ¾" bolt, washers, and nut. Tighten to 20 ft-lbs. (Fig. 49) you may need to reform stock brake line wire mounts to allow adequate slack at full droop.

FIGURE 49

110. Reattach ABS wire to clips on brakeline.

FINAL INSTALLATION STEPS

111. Verify the rear air bags are properly seated on the axle and the ends of the bags are folded over both ends. (Refer to the video linked on our website)

! Caution *Failure to ensure the bags are seated and folded over both ends can result in damage to the air bag or personal injury when pressurizing the system.*

112. Using a jack or hoist raise the rear of the vehicle to a ride height of approx. 25" from the center of the wheel to the fender. This is done to help reduce any pinched areas in the rear air bag. Check the bag for any pinched areas and adjust the jack to reduce these while keeping the bags engaged to the axle and folded over both ends.
113. Reconnect the battery and enable the air ride system under the vehicles control panel. The air suspension system will return to normal operation when the vehicle reaches 15 mph.
114. Tighten upper control arm hardware to 120 ft-lbs.
115. Install rear trackbar into the lower hole in the relocation bracket with OE bolt and nut. Tighten to 95 ft-lbs.
116. Re-install inner fender liners with factory screws.
117. Center the lower cams and torque lower control arm hardware to 125 ft-lbs. Torque the strut-to-lower control arm bolt to 125 ft-lbs.
118. Since the front brakelines were disconnected the brakes must be bled before driving vehicle. Also do a final check to ensure the brake lines will not contact the tire or other moving components.
119. Check all fasteners for proper torque. Recheck all fasteners after 500 miles and at regularly scheduled maintenance intervals.
120. A complete front end alignment is required. Be sure to put the vehicle in alignment mode in the center control panel during the alignment process. Do not drive the vehicle with the steering wheel off center. This can cause unsafe driving conditions.

POST INSTALLATION NOTES

1. Recheck all fasteners for proper torque. Check again after 500 miles and at regularly scheduled intervals.
2. If the air suspension system is giving error messages or is not leveling the vehicle, most likely a leak is present. Check all of the push to connect fittings as well as the screw in fittings installed on the new air lines with soapy water to check for leaks.

AIR SYSTEM TROUBLESHOOTING INFORMATION

1. To reset the air suspension module, press the terrain select "Up" and "Down" switches simultaneously for more than 5 seconds. This will disable the air suspension. Driving the vehicle 15 mph will return the system to normal operation.
2. According to Ram, the air bags can be removed up to 5 times without having a leakage concern, however in the event that the air suspension is not functioning correctly, it may be necessary to fill the system using a scan tool under the Air Suspension Control Module (ASCM) routines. This can typically only be accessed by a Ram dealer scan tool.

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