

FORD 2010-14 Raptor 4.5" Kit

THANK YOU FOR CHOOSING ROUGH COUNTRY FOR YOUR SUSPENSION NEEDS.

Rough Country recommends a certified technician install this system. In addition to these instructions, professional knowledge of disassemble/reassembly procedures as well as post installation checks must be known. Attempts to install this system without this knowledge and expertise may jeopardize the integrity and/or operating safety of the vehicle.

Please read instructions before beginning installation. Check the kit hardware against the parts list. Be sure you have all needed parts and know where they go. Also please review tools needed list and make sure you have needed tools.

PRODUCT USE INFORMATION

AWARNING As a general rule, the taller a vehicle is, the easier it will roll. We strongly recommend, because of rollover possibility that seat belts and shoulder harnesses should be worn at all times. Avoid situations where a side rollover may occur.

Braking performance and capability are decreased when larger/heavier tires and wheels are used. Take this into consideration while driving. Do not add, alter, or fabricate any factory or after-market parts to increase vehicle height over the intended height of the Rough Country product purchased. Mixing component brands is not recommended.

Rough Country makes no claims regarding lifting devices and excludes any and all implied claims. We will not be responsible for any product that is altered. If questions exist we will be happy to answer them concerning the design, function, and correct use of our products.

The 6"suspension system was developed using a 35X12.50/18 tire with 18 x 9 wheel with 4 1/2" backspace. When using a stock wheel the maximum tire width is 11 1/2". The lifts were designed to lift the front to level the vehicle. Due to manufacturing, dimension variances, and inflation all tire and wheel combinations should be tested prior to installation on all oversized / wider then stock tires. We recommend a wheel not exceeding 8" in width be used with a minimum backspacing of 4.5" to a maximum of 5".

ANOTICE

2011-14 vehicles will require the EPAS (Electronic Power Assist Steering) plugs to be disconnected prior to beginning installation of this kit. See installation instructions. Failure to disconnect these plugs may result in damage to the EPAS module resulting in an error message being displayed, which will require replacement of the EPAS module

ANOTICE

DEALER AND VEHICLE OWNER

Any vehicle equipped with any Rough Country product should have a "Warning to Driver" decal installed on the inside of the windshield or on the vehicle's dash. The decal should act as a constant reminder for whoever is operating the vehicle of its unique handling characteristics. **Torque Specs:**

Sizo

Grado 5

Grada 8

TOOLS NEEDED:

		Size	Grade 5	Grade o
5mm Allen Wrench	Floor Jack	5/16"	15 ft/lbs	20 ft/lbs
8mm Allen Wrench	Jack stands	3/8"	30 ft/lbs	35 ft/lbs
8mm wrench /socket	Reciprocating Saw	7/16"	45 ft/lbs	60 ft/lbs
10mm wrench /socket	Hammer	1/2"	65 ft/lbs	90 ft/lbs
12mm Wrench	9/16 wrench /socket	9/16"	95 ft/lbs	130 ft/lbs
13mm wrench / socket	1 1/16" Wrench	5/8"	135 ft/lbs	175 ft/lbs
15mm wrench /socket	Drill	3/4"	185 ft/lbs	280 ft/lbs
16mm wrench /socket	1/4" Drill Bit			
17mm wrench /socket	5/8" Drill Bit		Class 8.8	Class 10.9
18mm wrench /socket	41/64" Drill Bit	6MM	5 ft/lbs	9 ft/lbs
19mm wrench /socket	11/32" Drill Bit	8MM	18ft/lbs	23 ft/lbs
21mm wrench /socket		10MM	32ft/lbs	45ft/lbs
22mm wrench /socket		12MM	55ft/lbs	75ft/lbs
24mm wrench /socket		14MM	85ft/lbs	120ft/lbs
		16MM	130ft/lbs	165ft/lbs
30mm wrench /socket		18MM	170ft/lbs	240ft/lbs
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KIT CONTENTS

Kit Includes: 1558Box1: (11-14) 1-Driver Side Knuckle 1558Box2: (11-14) 1-Pass Side Knuckles 55200Box1: 1-Fr Cross-Member 1-Rr Cross-Member 55200Box2: 2-Black Cable Tie 55200BAG 55200BAG1 55200BAG2 55200BAG3 1-Dr Side Sway Bar Bracket 1-Pass Side Sway Bar Bracket 2-Fr Brake Line Brackets 1-Front Lower Skid Plate 1-Front Driveshaft Spacer 2-Dr & Pass Diff Bracket 1-Pass Side Diff Brace Bracket 1-1500 Cam Bolts 1-Rear E-Brake Bracket 1-Rear Brake Line Bracket 55200Box3: 9/16BAG 55200BAG4 1263BAG2 2-Rear Shock Brackets 1-Dr Rear Block 1-Pass Rear Block 2-Fr Strut Spacers 4-9/16" x 3 x 11" U-bolts 1-Skid Plate Mount 55200BAG Instruction Sheet

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55200Bag1 Containing: For Fr Dr Side Upper Diff Mount: 1- 9/16" x 4" Bolt 2-9/16" Flat Washers 1-9/16" Lock Nut For Fr Dr Side Lower Diff Mount: Rear Shock Extensions 1-9/16" x 4" bolt 2-9/16" Flat Washers 1-9/16" Lock Nut For Rr / RrCross-Member: 2-18mm x 160mm Bolts 4-18mm Flat Washers 2-18mm Lock Nuts For Fr Drivers Side Diff Mount: 1-9/16" x 4 1/2' Bolt 2-9/16" Flat Washers 1-9/16'" Lock Nut 55200Bag2 Containing: For Front Skid Plate: 4-3/8" x 1" Bolt 4-3/8" Flat Washers 2-3/8 Nylock Nuts For Front Driveshaft: 6-10mm x 80mm Allen Bolts For Front Brake Line Bracket: 2-5/16" x 3/4" Bolt 4-5/16" Flat Washer 2-5/16" Lock Nut For Sway Bar Brackets: 4-3/8" x 1' Bolts 8-3/8 Flat Washers 4-3/8 Lock Nuts For Strut Spacers: 6-10mm Nylock Nuts 6-3/8 Flat Washers

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55200Bag3 Containing:

For Pass Diff Brace 2-12mm x 35mm Bolt 2-12mm-1.75 Nut 4-1/2 Flat Washer 2-Rear Shock Brackets 55200Bag4 Containing: For Rear Shock Brackets: 2-12mm x 75mm Bolts 6-1/2" Flat Washers 2-Square Washers 2-1/2" x 1.5" Bolts 2-1/2" Nylock Nuts For Rear Brake Line Brkt: 1-3/8" x 1' Bolt 2-3/8" Flat Washers 1-3/8" Lock Nut For Rear E-brake Bracket: 1-7/16" x 1" Bolt 2-7/16" Flat Washers 1-7/16" Lock Nut 1-5/16" x 3/4" Bolt 2-5/16" Flat Washers 1-5/16" Lock Nut 9/16Bag For Rear Blocks: 8-9/16" Nuts 8-9/16" Flat Washers 1263Bag2 For Blocks: 4-7/16" x 3" U-Bolts 8-7/16" Nuts 8-7/16" Washers

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INSTALLATION INSTRUCTONS

- 1. Chock the rear wheels and jack up the front of the vehicle.
- 2. Place jack stands under the frame rails and lower onto jack stands.
- 3. Remove the wheels/tires using a 21mm socket.
- 4. Remove the front skid plate and skid brace using a 13mm socket on the 4 front bolts and a 15mm socket on the 2 rear bolts. Retain hardware for reuse. See Photos 1 & 2.





- 5. Remove the center skid plate using a 13mm socket. See Photo 3.
- 6. Disconnect the 2 wiring harnesses going to the rack and pinion. See Photo 4.





- 7. Using pliers, remove the axel nut dust cap.
- 8. Using a 13mm socket, remove the axle nut. Do not use an impact. See Photo 5.
- 9. Using a 21mm wrench, loosen the tie rod end nut. Strike the knuckle, at the tie rod end, to release the taper. Remove the tie rod end nut and retain for reuse. See Photo 6.







- 10. Remove the ABS and brake line bracket from the knuckle using a 8mm wrench for the ABS wire and a 10mm wrench for the brake line bracket. Retain hardware for reuse. **See Photo 7.**
- 11. Remove the vacuum lines from the hub. See Photo 8.





- 12. Using a 21mm socket, remove the brake caliper. Hang caliper out of way. **Do not let caliper hang by brake hose as this will damage hose.** Retain hardware for reuse. **See Photo 9.**
- 13. Remove the bake rotor. See Photo 10.





- 14. Using an 8mm socket, remove the dust shield from the knuckle. Retain hardware. See Photo 11.
- 15. Using a 5mm Allen, remove the ABS sensor. See Photo 12.



Remove the brake dust shield.



Remove the ABS sensor.



- 16. Using an 18mm and 8mm wrench, **loosen** the upper ball joint nut. Strike the knuckle, at the upper ball joint, with a hammer to release the taper of the ball joint. Remove the nut and retain for reuse. **See Photo 13.**
- 17. Using a 21mm, **loosen** the lower ball joint nut. Strike the knuckle, at the lower ball joint, with a hammer to release the taper of the ball joint. Remove the nut and retain for reuse. **See Photo 14.**





- 18. Remove the knuckle from the upper and lower ball joints. See Photo 15.
- 19. Remove the sway bar links from the sway bar using an 18mm wrench. Retain hardware for reuse. See Photo 16.



20. Using a 30mm socket and 27mm wrench, remove the lower strut hardware. Retain hardware. **See Photo 19.** 21. Using 21mm and 27mm loosen the lower control arm bolts. **See Photo 20.**







- 22. Using a paint pen draw a straight line onto the upper wedge plate and the strut mount. Using an 18mm wrench, remove the upper strut nuts along with the wedge plate. Retain for reuse. **See Photo 19.**
- 23. Remove the strut. See Photo 20.



- 24. Remove the lower control arm using an 1 1/6 socket on the nut and 21mm wrench on the bolt. Retain hardware. **See Photo 21.**
- 25. Remove the nut securing the shield to the sway bar stud using a 13mm socket. See Photo 22.





- 26. Remove the nut securing the shield to the diff using a 13mm socket. See Photo 23.
- 27. Remove the shield from the vehicle. See Photo 24.







- 28. Using a 15mm socket, remove the sway bar from the frame brackets. See Photo 25
- 29. Using 15mm and 18mm wrenches, remove the factory rear cross member. See Photo 26.



- 30. Using a 10mm socket, remove the drive shaft from the front differential. Retain hardware. Support driveshaft, do not let the driveshaft hang from the rear rzeppa joint as damage can occur. See Photo 27.
- 31. Tape supplied cutting template on front and back side of the driver side lower cross-member mount. Using template as a guide, trim cross-member mount to allow the differential to be removed. See Photo 28.





- 32. Using a 10mm socket remove the bolt from the steering joint connected to the rack and pinion. Remove the steering joint. See Photo 29.
- 33. Remove the differential vent tube from the differential.
- 34. Support the differential using a floor jack and remove the upper driver side differential bolt using a 18mm wrench. Retain hardware for reuse. **See Photo 30.**







- 35. Remove the passenger side differential bolt using 18 & 21mm wrench. Retain hardware for reuse. See Photo 31.
- 36. Remove the lower rear driver side differential bolt using a 21mm socket / wrench. Lower and remove the differential from the vehicle. See Photo 32.



- 37. Complete the trimming of the frame on the driver side using the template and drill a pilot hole in the center using 1/4" drill bit. Finish the hole shown in **Photo 33** using a 5/8" drill bit. Paint cut area to prevent rust.
- 38. Install the upper differential drop bracket on the driver side using the stock hardware. See Photo 34. Do not tighten at this time.



- 39. Install the passenger differential bracket using the stock hardware. Photo 35. Do not tighten at this time.
- 40. Install the differential in the new brackets with the supplied hardware. Install the 9/16" x 4" bolt, washers & nut in the in the passenger side mount. See Photo 36.







- 41. Swing the differential up to the driver side and install the 9/16" x 4" bolt, washers and nut from the front to rear. NOTE: The differential mounts will need to be loose to push the differential to the passenger side in order to clear the rack and pinion and install the bolt. See Photo 37.
- 42. Install the rear cross-member and sway bar mounts on the driver and passenger side as shown in Photo 38. The supplied 18mm x 160mm bolt will install through the sway bar bracket and rear cross-member, securing it to the stock location. Do not tighten at this time.





- 43. Install the passenger side differential brace as shown in **Photo 39** using the supplied 12mm-1.75 x 35mm hex bolts 1/2" flat washers and the 12mm-1.75 nuts. Do not tighten at this time.
- 44. Install the supplied 9/16" x 4 1/2" rear differential bolt through the sway bar mount and new differential mount. See Photo 40. Do not tighten at this time.





- 45. Reinstall the stock sway bar flag bolts in the new sway bar drop bracket to keep the bracket aligned while tightening the cross-member bolts. **See Photo 41.**
- 46. Reinstall the vent tube on the differential.
- 47. Connect the steering joint to the rack and pinion using the retained bolt. Tighten using a 10mm socket.
- 48. At this time torque the OE upper driver and passenger diff mounts to 90 ft-lbs. using a 18mm socket. Torque the supplied 3 lower diff bolts to 100 ft-lbs. using a 21mm wrench and a 22mm socket. Torque the passengers side diff brace to 55 ft-lbs. 18mm wrench and a 19mm socket.
- 49. Remove the 2 clips from the OE skid plate. Retain hardware for reuse. See Photo 42.





- 50. Install the 2 OE clips onto the skid plate mount. See Photo 43.
- 51. Install the skid plate mount onto the frame of the vehicle using the retained OE bolts. Torque to 32 ft-lbs. using a 15mm socket. See Photo 44.



- 52. Mark the corners of the skid plate using painters tape to be trimmed. Mark the top 5/8 of an inch and the side 1/2. **See Photo 45.**
- 53. Using a reciprocating saw trim along the taped line. Use a sander to smooth the area were trimmed. Use a color match spray paint to cover the trimmed area. **See Photo 46.**





- 54. Install the skid plate onto the 2 factory front mounts and the installed skid plate mount using the 6 retained bolts. Torque to 32 ft-lbs. using a 15mm socket. **See Photo 47.**
- 55. Install the front crossmember using the retained hardware. Do not tighten a this time. See Photo 48.







- 56. Once both sides of the crossmember have been installed make sure the skid plate does not come in contact with the crossmember. **See Photo 49.**
- 57. Install the control arms into the crossmembers using the supplied 18mm x 160mm cam bolts, washers and nuts. **See Photo 50.** Do not tighten at this time.



- 58. Install the new skid plate in the rear cross-members threaded holes using the supplied 3/8" x 1" bolts, washers and the 3/8" x 1" bolts, flat washers and nuts in the front crossmember. **See Photo 51.** Tighten using a 9/16" socket.
- 59. Torque all upper cross-member bolts to 190 ft-lbs. using a 21mm, 1 1/16" socket and 1 1/16" wrench. Torque the sway bar drop mounts on the frame to 35 ft-lbs. using the factory hardware with a 15mm socket. **See Photo 52.**





- 60. Install the drive shaft spacer with supplied 10mm x 80mm hardware. See Photo 53. Tighten using a 8mm allen wrench.
- 61. Using a 10mm wrench remove the brake line bracket from the driver and pass side frame. See Photo 54.







- 62. On the passenger side remove the brake line from the two factory clips. See Photo 39.
- 63. Install the new brake line bracket on the driver and passenger side with the stock hardware. See Photo 40.



- 64. Install the factory passenger side brake line in the new bracket using the supplied 5/16' x 3/4" bolt, washer and nuts. **See Photo 57.**
- 65. On the driver side, pull slightly on the brake line to allow the line to be installed on the new bracket. Secure the brake line to the new bracket with the supplied 5/16" x 3/4" bolt, washers and nut.
- 66. Using a 13mm socket / wrench, tighten the supplied brake line hardware and 10mm for the stock hardware.
- 67. Locate the new top spacer. See Photo 58.





- 68. Install the strut spacer on top of the strut using the 3 retained nuts. Torque to 35 ft-lbs. using a 18mm socket. **See Photo 59.**
- 69. Install the strut spacer wedge matching the marks made on the frame when removing the strut.







- 70. Install the strut into the vehicles frame mount. See Photo 61.
- 71. Align the painted marks on the wedge and the frame then install the wedge onto the studs of the strut spacer using the supplied 10mm nuts, lock washers and washers. **See Photo 62.**





- 72. Install the lower strut in the lower control arm using the factory hardware. Do not tighten at this time.
- 73. Torque the upper strut mount hardware to 35 ft-lbs. using a 17mm socket.
- 74. Install the sway bar on the sway bar links located on the lower control arms. Install nut to hold the sway bar in place but do not tighten at this time. **See Photo 63.**
- 75. Swing up the sway bar and install on the sway bar drop brackets using the supplied 3/8" x 1" bolts, washers and nuts. Torque the 3/8sway bar drop hardware to 30 ft-lbs. using a 9/16" on. Torque the sway bar links on the lower control arms to 55 ft-lbs. 18mm socket. **See Photo 64.**





76. Carefully remove the hub locking mechanism using an 8mm socket. Retain hardware. See Photo 57. 77. Using an 18mm socket, remove the hub bolts from the factory knuckle. See Photo 58.







- 78. Remove the hub bearing assembly from the knuckle. See Photo 67.
- 79. Install the hub bearing assembly into the supplied lift knuckle using the factory hardware. Torque to 160 ft-lbs. using an 18mm socket. See Photo 68.





ANOTICE

We recommend using OE instructions for disassembly and assembly of IWE actuator, the following instructions are for reference only.

80. Install IWE actuator on CV shaft.

A NOTICE Make sure the actuator splines line up to the splines on the CV shaft. See photo 69.

81. Install CV shaft into the knuckle assembly and the lower ball joint. Torque lower ball joint to 110ft-lbs. use a 21mm socket. See Photo 70.





- 82. Using a floor jack, raise the lower control arm and connect the upper ball joint on the upper control arm to the spindle. Use a 18mm wrench to tighten the ball joint to the knuckle, If ball joint turns while tightening, use a 8mm wrench to hold the ball joint stud. Torque to 85 ft-lbs. using an 18mm socket.
- 83. Using a hand vacuum pump, apply and hold 24inHG of vacuum to the actuator through the large port. See Photos 71 and 72.





- 84. Install the (3) bolts securing the actuator to the knuckle, torque to 25 ft-lbs. using an 8mm socket. See Photo 73.
- 85. **ANOTICE** With vacuum still applied to actuator. Measure the depth of the CV shaft treads protruding through the hub bearing. If **minimum 15.5mm or .61**" is not achieved, rotate the hub to eliminate binding of the splines. **See Photo 74.**





- 86. Install axle nut and tighten to 30ft-lbs. **ANOTICE Do Not Use an impact**, caution must be taken or damage to shaft may occur. See Photo 75.
- 87. Verify free rotation of the hub with NO CV shaft rotation. No clicking or grinding noise should be present
- 88. Release the vacuum from the actuator and rotate the hub to engage the actuator. You may hear/feel the actuator engage.
- 89. Verify that the hub and CV rotate together. Reconnect the vacuum lines to the actuator. See Photo 76.





- 90. Install the ABS wire on the bearing assembly. Torque to 8 ft-lbs. using a 5mm allen wrench. See Photo 77.
- 91. Install the rotor and caliper on the knuckle with the stock hardware using a 21mm socket. Torque to 140 ft-lbs. See Photo 78.





- 92. Attach the brake line to the knuckle using stock hardware. Torque to 18 ft-lbs. using a 10mm socket. Attach the ABS line to the knuckle using stock hardware. Torque to 5 ft-lbs. using an 8mm socket. See Photo 79.
- 93. Install the tie rod end into the knuckle using the factory hardware. Tighten the nut using a 21mm wrench and the ball joint stud with an 8mm wrench. Torque to 60 ft-lbs. See Photo 80.



94. Install the tires and wheels using a 21mm socket. Remove the jack stands and lower the truck to the ground. 95. Tighten the lower control arm bolts using a 1-1/16" wrench and socket. **Torque to 240 ft/lbs.**



REAR INSTALLATION

- 1. Chock the front tires and jack the rear the rear end up. Put jack stand under the frame rail and lower truck onto jack stands.
- 2. Remove tires and wheels using a 21mm socket.
- 3. Using a 10mm wrench, remove the brake line assembly on the inner driver side frame rail. See Photo 1.
- 4. Install the brake line extension bracket on the frame using the stock hardware and tighten using a 10mm wrench. **See Photo 2.**
- 5. Install the brake line assembly to the new bracket using the supplied 3/8" x 1" bolt, washers and nut. Tighten using a 9/16" socket and wrench. See Photo 2.





6. Separate the e-brake cable as shown on the drivers side and remove the e-brake cables from the frame mount as shown in **Photo 3 & Photo 4.**





7. To install the new e-brake bracket measure from the rear measure 1 5/8" and from the bottom measure up 1 3/8" and mark hole to be drilled. See Photo 5 & 6.







- 8. Drill hole using a 11/32" drill bit. See Photo 7.
- 9. Install the new bracket as shown with the supplied 7/16" x 1" bolt, washers, nut in the factory hole and 5/16" x 3/4" bolt, washer and nut in the drilled hole. See Photo 8. Tighten using a 19mm and 13mm socket / wrench.



- 10. Using a 15mm wrench and an 18mm socket, remove the lower shock hardware. Retain hardware. See Photo 9.
- 11. Using a jack support the rear end and remove U-bolts using a 21mm socket and remove the factory blocks. See Photo 10.





- 12. Install the supplied blocks on the block pin holes on the axle and raise the axle into place. Note- Taller end of block to the rear of the truck and the bump stop flange will go to the inside!
- 13. Install the axle u-bolts and tighten using a 13/16" deep well socket. Torque to 90 ft-lbs See Photo 11.
- 14. Install Anti-wrap u-bolts over the leaf spring and into the blocks. Secure with supplied hardware and torque to 45ftlbs. using a 5/8 socket. See Photo 12.





Tighten anti-wrap u-bolts.



- 15. Install the supplied rear lower shock bracket into the factory lower shock mount using the supplied 12mm x 75mm bolt, washer, and flange lock nut (51930BAG3). Do not tighten. **See Photo 13.**
- 16. Install the supplied 1/2" x 1.5" bolt and square washer (51930BAG3) into the rear of the factory lower shock mount. See Photo 14.



- 17. Place the supplied 1/2" washer and nylock nut into the front of the factory lower shock mount and onto the 1/2" x 1.5" bolt (51930BAG3). See Photo 15.
- 18. Torque the 1/2" hardware using a 3/4" socket and wrench, to 90ft/lbs. See Photo 16.





- 19. Install the shock into the relocation bracket using the factory hardware. Torque to 55 ft-lbs. using a 15mm wrench and an 18mm socket. See Photo 17.
- 20. Torque the lower shock bracket bolt to 75ft/lbs using an 18mm socket and wrench. See Photo 18.







- 21. Install the tire and wheels.
- 22. Raise up the rear of the vehicle and remove the jack stands. Lower the vehicle to the ground.23. Install the e-brake cable in the new mount and reattach the e-brake cables on the frame. See Photo 19.









POST INSTALLATION INSTRUCTIONS

- 1. Check all fasteners for proper torque. Check to ensure there is adequate clearance between all rotating, mobile, fixed and heated members. Check steering gear for interference and proper working order. Test brake system
- Perform steering sweep. Check to ensure brake hoses have sufficient slack and will not contact rotating, mobile, or fixed members, adjust lines/brackets to eliminate interference and maintain proper working order. Failure to perform inspections may result in component failure
- 3. Readjust headlights to factory settings
- 4. Have vehicle aligned by a certified alignment professional to factory specifications.
- 5. Re-torque all nuts, bolts, and especially u-bolts after the first 100 miles, again after another 100 miles and then check periodically thereafter
- 6. All components must be retightened after 500 miles, and every three thousand miles after installation.

Thank you for purchasing a Rough Country Suspension System.

By purchasing any item sold by Rough Country, LLC, the buyer expressly warrants that he/she is in compliance with all applicable, State, and Local laws and regulations regarding the purchase, ownership, and use of the item. It shall be

the buyers responsibility to comply with all Federal, State and Local laws governing the sales of any items listed, illustrated or sold. The buyer expressly agrees to indemnify and hold harmless Rough Country, LLC for all claims resulting directly or indirectly from the purchase, ownership, or use of the items.

