

advanced FLOW engineering

Instruction Manual P/N: 46-71320B

Ford 9.75 – 12 Bolt Rear Differential Cover

Make: Ford	Model: F-150	Year: 1997-2008	Engine: V6 4.2L
Make: Ford	Model: F-150	Year: 2004-2014	Engine: V8 4.6L
Make: Ford	Model: F-150	Year: 2009-2019	Engine: V6 3.5/3.7L, V8 5.0L
Make: Ford	Model: F-150	Year: 2015-2019	Engine: V6 2.7L/3.0L
Make: Ford	Model: F-150 Raptor	Year: 2009-2010	Engine: V8 6.2L
Make: Ford	Model: F-150 Raptor	Year: 2021-2023	Engine: V6 3.5L
Make: Ford	Model: F-150 Raptor	Year: 2021-2024	Engine: V8 3.5L
Make: Ford	Model: F-150 Raptor R	Year: 2023-2024	Engine: V6 5.2L(sc)

Note: NOT tested on Lightning/Harley Davidson and models with rear sway bars.



- Please read the entire instruction manual before proceeding.
- Ensure all components listed are present.
- If you are missing any of the components, call customer support at 951-493-7100.
- Ensure you have all necessary tools before proceeding.
- Ensure that your vehicle is cooled off before proceeding.
- Retain factory parts for future use.

Label	Qty.	Description	Part Number
A	1	Differential Cover – Black, Machined Fins	05-61158B
B	15	Washer, Flat	03-50228
C	2	Plug, 1/8" NPT	03-50029
D	1	Plug, Magnetic 1/2" NPT, 3" Deep Reach	03-50612
E	1	RTV Silicone	05-60096
F	12	Screw, Socket Head 5/16"-18x1.0	03-50227
G	1	Plug, 1" NPT Sight Glass	03-50224
H	1	Plug, M12 x 1.25	03-50385
I	1	Washer, Aluminum: M12	03-50384
J	3	Bracket	05-60185
K	3	Zip Tie, 12"	05-60167



A



B



C



D



E



F



G



H



I



J



K



Refer to Figure A for Steps 1-5:

Note: Your vehicle must be completely cooled off before proceeding with the installation.

1. Park your vehicle on a flat, dry surface. You will need to block the tires to prevent the vehicle from rolling.

Note: You will need to get under the truck to do this installation. Please use every precaution when lifting the vehicle.

2. Place a drain pan under the differential cover.
3. Remove the brake line bracket by pulling the bolt out of the differential housing.
4. Remove the **bottom** eight (8) bolts from the differential cover.
5. Loosen, but do not remove, the top four (4) bolts. Break the seal on the cover, allowing the gear oil to drain.



Refer to Figure B for Steps 6-7:

6. Remove the four (4) remaining bolts from the top of the differential cover.

Note: Be careful when removing the OEM gasket, it will be reused later during the installation.

7. Remove the OEM cover and gasket from the housing.



Refer to Figure C for Steps 8-10:

8. Use a clean, lint free rag to wipe down the remaining gear oil from the housing.
9. Clean off the sealing surface with a gasket scraper. Be careful not to gouge the surface while cleaning.
10. Check the surface of the housing for any irregularities. If there are any, carefully remove high spots using a smooth flat file.



Refer to Figure D for Steps 11-14:

11. Hold the OEM gasket and supplied aFe differential cover into position, aligning the screw holes. Install one (1) of the supplied 5/16" – 18 X 1" socket head screws and flat washers at the top of the cover to hold it in place.
12. Continue installing the eleven (11) remaining 5/16" – 18 X 1" socket head screws and flat washers finger tight.
13. Tighten the bolts to factory specifications in a criss cross pattern.
14. Look at the brake line that runs over the differential cover. If it appears to be loose, use the supplied brackets and the supplied zip ties. The brackets go under the bolts that were installed in Step 12. Zip tie the brake line to the bracket.

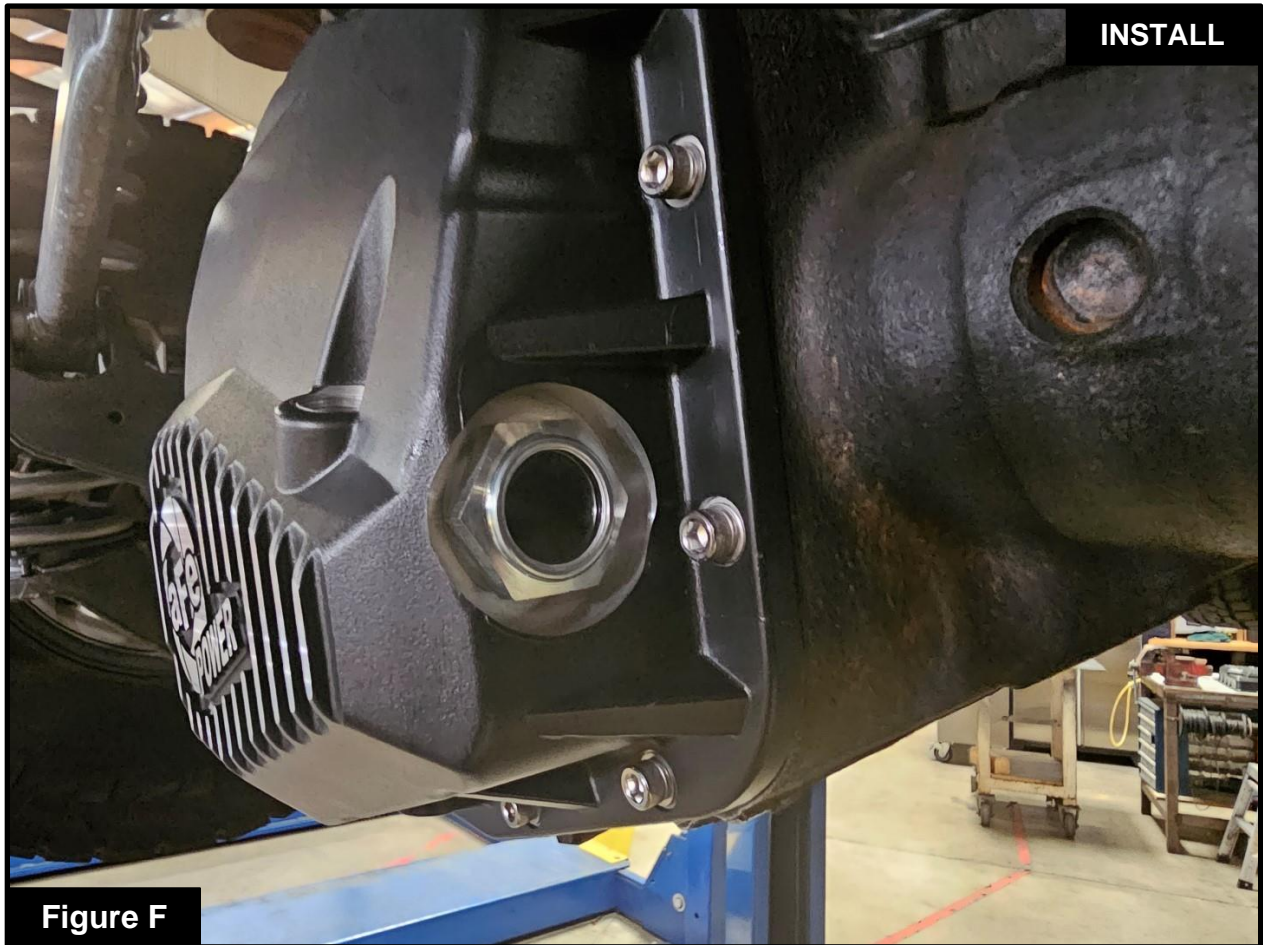
Note: If your vehicle does not have a reuseable gasket, use the supplied RTV to seal the differential cover to the to the axle.



Refer to Figure E for Step 15:

Note: Do not over tighten the drain plug. Please read instructions carefully.

15. Install the supplied M12x1.25 drain plug and crush washer into the bottom of the cover. When tightening the drain plug, screw the drain in till it becomes tight. Then turn a $\frac{1}{4}$ of a turn to tighten.



Refer to Figure F for Step 16:

Note: Please make sure there is sealant paste or tape on all the NPT plugs and fittings before installing them on the vehicle.

16. Install the supplied 1" sight glass into the side of the cover.



Figure G

Refer to Figure G for Steps 17-18:

17. Using the fill port, fill the aFe differential cover with new gear oil. Fill until gear oil runs out of the 1/8" NPT port on the side of the cover.

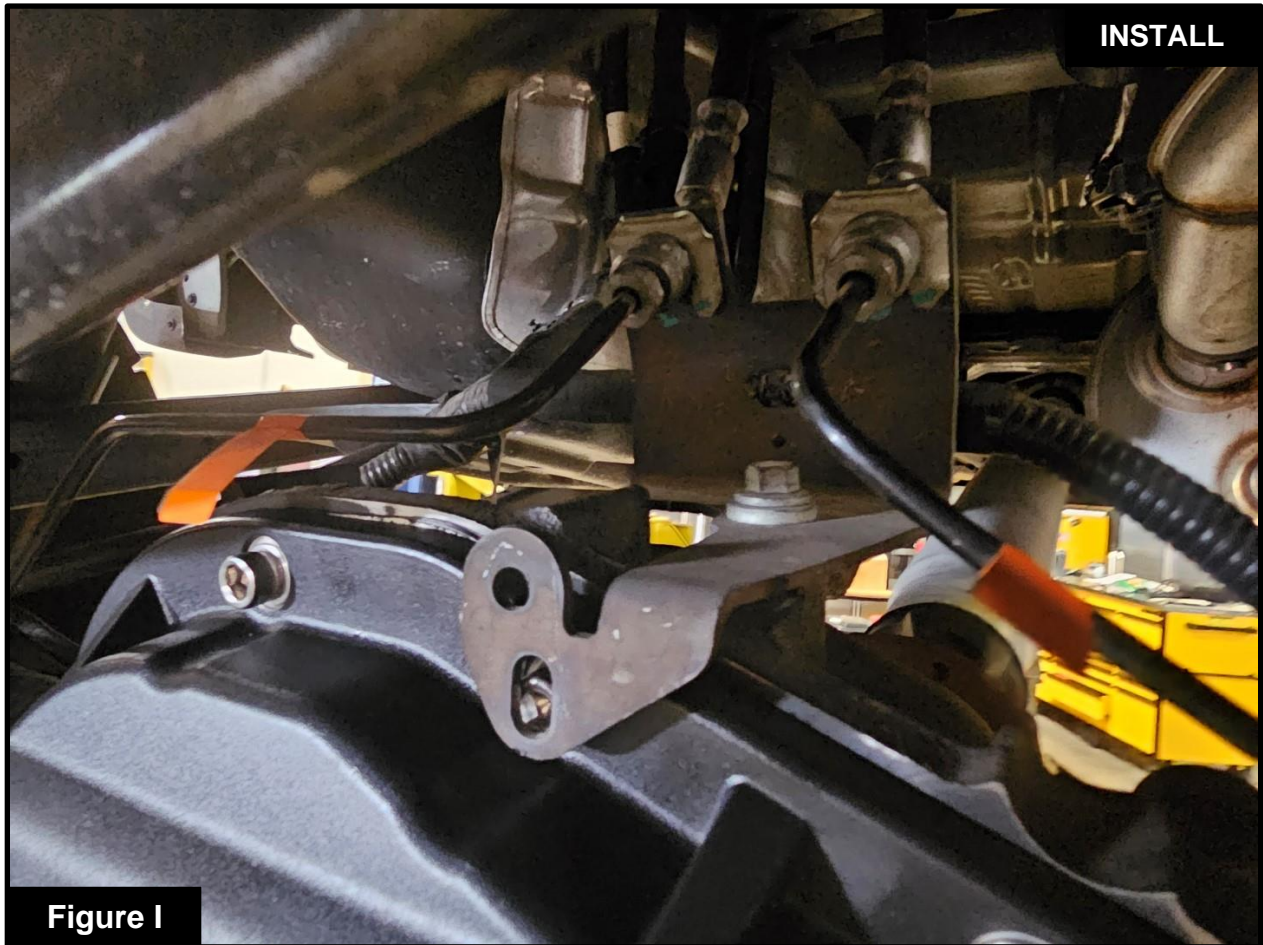
Note: If your vehicle is lifted and your axle has been rotated, you will have to verify you have the correct oil level for your vehicle.

18. Apply Teflon tape/pipe sealant and install the supplied 1/8" NPT plug into the side of the cover.



Refer to Figure H for Step 19:

19. Apply Teflon tape/pipe sealant and install the supplied 1/2" NPT magnetic 3" deep reach plug into the top of the cover.



Refer to Figure I for Step 20:

20. Reinstall the brake line bracket into the factory location and tighten using the stock hardware.



Refer to Figure J for Step 21:

21. Your installation is complete.



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