

advanced FLOW engineering

Instruction Manual P/N: 46-70150 / 46-70152

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: **2017-2019** Engine: **V6 3.5L**

Note: Will NOT fit 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
A1	1	Differential Cover – Raw, Machined Fins (46-70150)	05-60237A
A2	1	Differential Cover – Black, Machined Fins (46-70152)	05-60237
B	1	Porthole View Gauge (Pre-installed) (46-70152)	05-60224
C	1	Plug, 6" Deep Reach, Magnet (46-70152)	03-50223
D	1	Plug, 1"-11.5 NPT (46-70150)	03-50390
E	1	Plug, 3/4"-14 NPTF (46-70150)	03-50391
F	1	O-Ring	05-60184
G	1	Socket Head Screws, 5/16"-18x1.0 (S/S)	03-50227
H	1	Plug, Square Socket Head, 3/4"-14 NPTF Magnet	03-50222
I	1	Plug, Hex Head Socket, 1/8"-27 NPT (Zn Plt)	03-50029
J	1	Flat Washers	03-50228
K	1	Brackets	03-50185
L	1	Zip Ties	05-60167

Note: Due to variances and / or modifications, it is up to the installer to make sure there is adequate clearances for the cover. Failure to do so may result in damage that is not covered by aFe's warranty.

Installation will require the following tools:

1/2" Socket, 3/16" Allen Key, 1/4" Allen Socket Key, 3/8" Ratchet, 1/2" Ratchet, Torque Wrench, Oil Drain Pan, Gasket Scraper, a clean lint free rag & Teflon (PTFE) pipe sealant tape, Factory recommended gear oil (Approx. 5 Quarts)

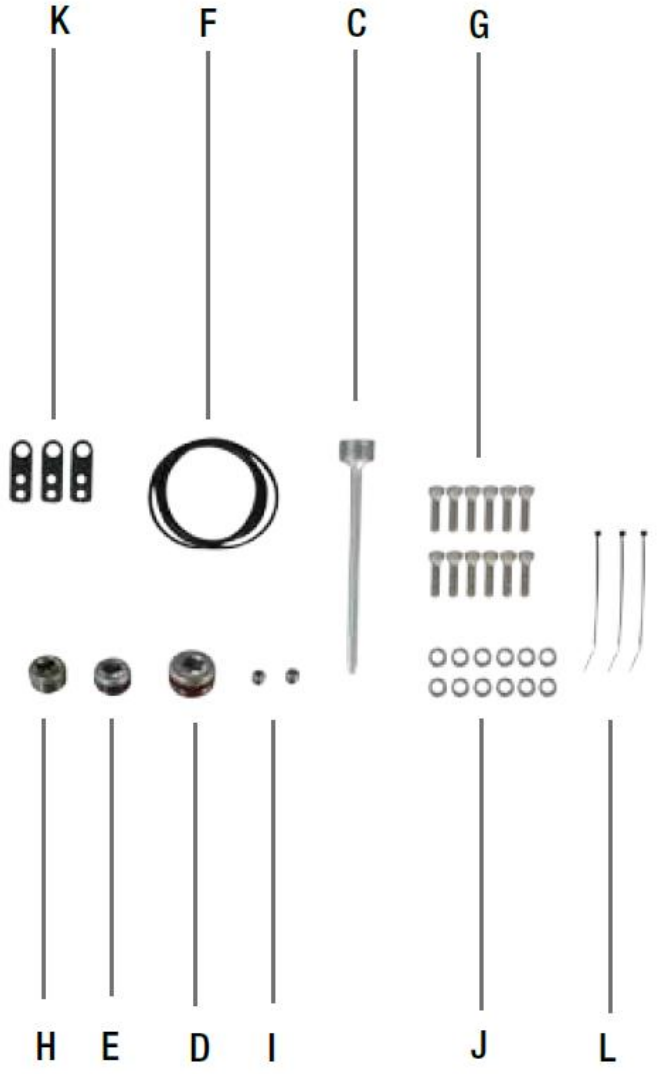
A1



A2



B





1. Park your truck on level ground and apply the parking brake.
2. Position a drain pan under the differential cover.
3. Remove the ABS wire from the studded bolts. (If applicable)
4. Using a 1/2" socket, begin by loosening the lower 6 screws on the differential cover.
5. Loosen the upper 6 screws to drain the gear oil. DO NOT remove the screws yet.

Note: You may need to pry the cover so the old fluid can start draining.



6. Remove all screws and allow the last of the old gear oil to drain.
7. Use a clean lint free rag and wipe down the remaining oil from the housing and scrape the gasket surface clean. This surface must be clean for the O-ring to seal.
8. Before installing the aFe differential cover, check the surface of the differential housing for any irregularities. Should there be any, carefully remove high spots using a smooth flat file.

DO NOT "ROUND OFF" THE FLAT GASKET SURFACE



9. Apply Teflon (PTFE) pipe sealant tape on the threads of all the plug components before installing.

Note: Photo shows deep reach magnetic fill plug which is only included in kit part number 46-70152. If you would like to purchase the magnetic dipstick fill plug see aFe part number 46-00002.



Note: Skip Step 10 if you are going to install a temperature sensing unit.

10. Install 1/8" NPT plug on top of aFe differential cover (Do NOT overtighten).



11. Install 1/8" NPT plug into aFe differential cover oil level port (Do NOT overtighten).

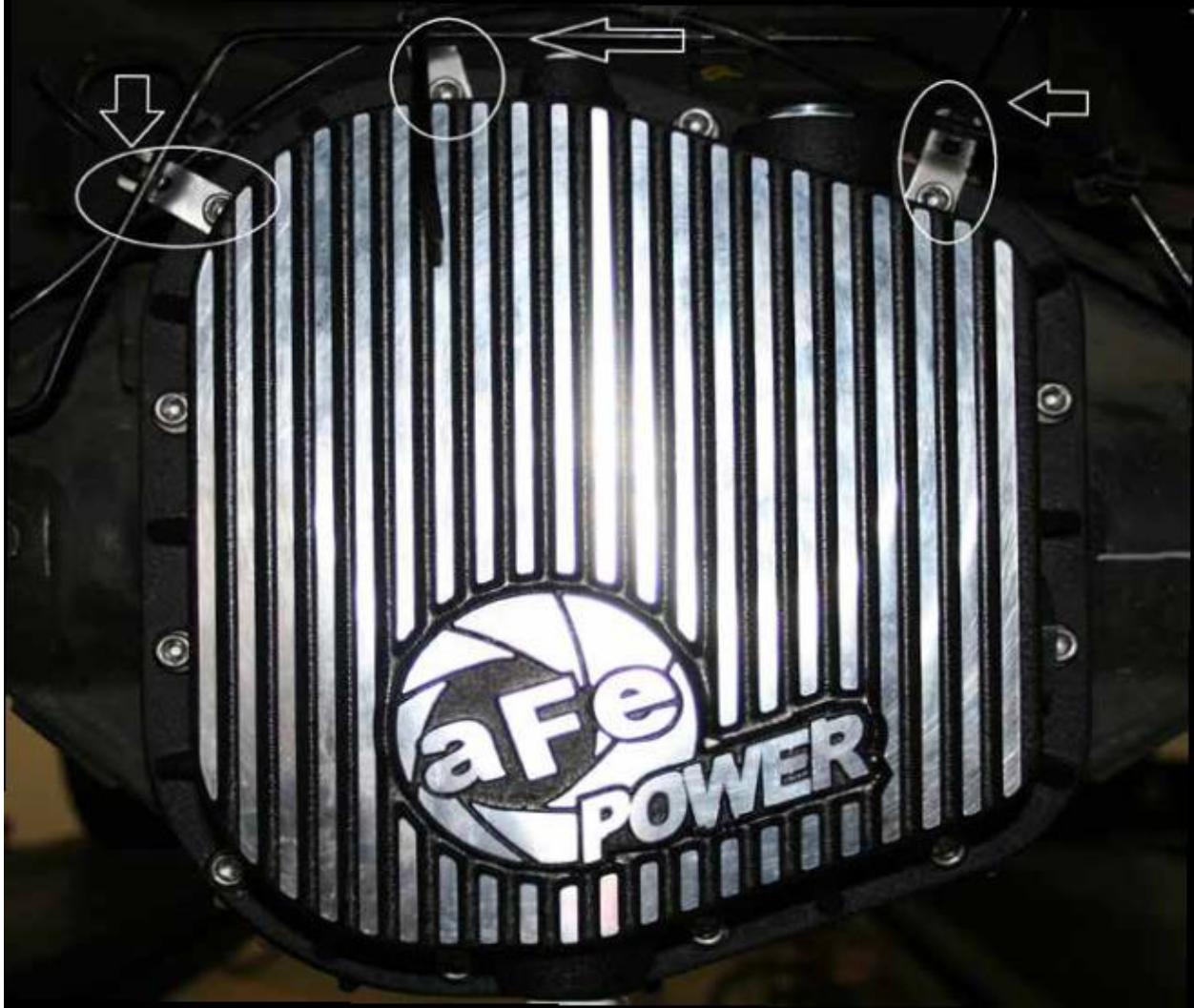
Note: Photo shows oil level sight glass which is only included in kit part number 46-70152. If you would like to purchase the oil level sight glass see aFe part number 46-00001.



12. Install magnetic Drain plug on bottom of aFe differential cover (Do NOT overtighten).



13. Install the supplied O-ring onto the aFe differential cover.



14. Install the aFe differential cover by aligning the bolt holes. Start one of the new socket head screws and washers in the top bolt hole. Continue around the bolt pattern until all 12 screws and washers are installed finger tight.
15. If needed, remove the three (3) bolt/washers (indicated by the arrows in photo) and install the supplied brackets as shown. Use the supplied zip ties to attach the ABS wire to the brackets.
16. Using the 1/4" Allen wrench, tighten the socket head screws to 11-14 ft.-lbs. in a cross tight pattern.



17. Refill the aFe differential cover with new gear oil. Your new aFe differential cover takes about 4.5 quarts to fill.
18. If your vehicle had been modified or “lifted” and the axle has been rotated, you will have to establish the correct oil level for your vehicle.
19. Use aFe site glass to check oil level (Sight glass in kit 46-70152 only). If your differential cover did not come with a sight glass, remove the small 1/8” NPT “over fill” plug (shown above) and fill the differential cover until oil level reaches the plug. When the differential cover is full, excess oil will flow out of the hole. Re-install 1/8” NPT “over fill” plug when proper oil level is established.



20. Install either the deep reach magnetic plug (46-70152) or the 3/4" NPT plug (46-70150) into the fill hole on the top of the cover with a 1/2" ratchet. (Do NOT overtighten).



21. Your installation is now complete. Thank you for choosing aFe Power!

Note: Drive at least 25 miles and check the oil level using the aFe sight glass, fill and re-torque all bolts if necessary.

Warranty

General Terms:

- aFe warrants their products to be free from manufacturer’s defects due to workmanship and material.
- This warranty applies only to the original purchaser of the product and is non-transferrable.
- Proof of purchase of the aFe product is required for all warranty claims.
- Warranty is valid provided aFe instructions for installation and/or cleaning were properly followed.
- Proper maintenance with regular inspections of product is required to insure warranty coverage.
- Damage due to improper installation, abuse, unauthorized repair or alteration is not warranted.
- Incidental or consequential damages or cost, including installation and removal of part, incurred due to failure of aFe product is not covered under this warranty.
- All warranty is limited to the repair and/or replacement of the aFe part. To request Return Goods Authorization (“RGA”), email RGA@afepower.com or call (951)493-7100. Upon receipt of the RGA, you must return the product to the address provided in the RGA, freight prepaid and accompanied with a dated proof of purchase and the RGA. Upon receipt of the defective product and upon verification of proof of purchase, aFe will either repair or replace the defective product within a reasonable time, not to exceed thirty days.

Product Category	P/N Prefix	Warranty Duration
Direct OE Replacement Filters	10,11,30,31,71,73	Life of the vehicle
Racing Filters	18	1 year
Universal	21,24,72	2 years
Air Intake Systems	50,51,54,55,75	2 years
Exhaust Systems	49	2 years
Intercoolers & Intercooler Tubes	46-2	2 years
Intake Manifolds	46-1	2 years
Differential Cover/Transmission Pan	46-7	Life of the vehicle
Exhaust Manifolds	46	2 years
Throttle Body Spacers	46-3	2 years
Fluid Filters	44	90 days
Pre-Filters	28	2 years
Heavy Duty OE Replacement	70	2 years
PowerSports OE Replacement	81,87	2 years
PowerSports Intake Systems	85	2 years

No other warranty expressed or implied applies nor is any person or advanced FLOW engineering authorized to assume any other warranty. Some States do not allow the exclusion or limitation of incidental or consequential damages or do not allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from State to State.



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