

advanced FLOW engineering

Instruction Manual P/N: 46-70380 / 46-70382

Make: **Ford** Model: **Super Duty F-350/F-450** Year: **2017-2021** Engine: **V8-6.7L Power Stroke**
Fits: **DANA M300 (14 Bolt) Dual Rear Wheel Axles Only!**



- 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.
- Do not attempt to work on your vehicle when the engine is hot.
- Disconnect the negative battery terminal before proceeding.
- Retain factory parts for future use.

Label	Qty.	Description	Part Number
A1	1	Diff. Cover - Black, Machined Fins; Pro Series (46-70382)	05-60800B
A2	1	Diff. Cover - Raw, Machined Fins (46-70380)	05-60800A
B	1	Porthole View Gauge (Included in 46-70382)	03-50224
C	1	Plug, 3/4" -14 NPTF, 6" Deep Reach	03-50223
D	14	Socket Head Cap Screws, M10 x 1.5 x 30	03-50533
E	1	Plug, Hex Head Socket, 1/8" - 27 NPT (Zn Plt)	03-50029
F	13	Washer, Flat: 3/8"	03-50230
G	1	Plug, 1"-11.5 NPT (included in kit 46-70380)	03-50390
H	1	Plug, M12 x 1.25	03-50385
I	1	Washer, Aluminum: M12	03-50384
J	1	RTV Silicone, Black	05-60096
K	1	Washer, Aluminum: M10	03-50567

Installation will require the following tools:

Oil Drain Pan, 3/8" Drive Ratchet, 12-Point 13mm Socket, 3/16" Allen Wrench, Gasket Scraper, 10mm Socket, 3/8" Torque Wrench, 1/2" Torque Wrench, 8mm Allen Socket, 14mm Socket, 1/2" Drive Ratchet.

Warranty Information available at: <https://afepower.com/contact#warranty>

Attention:

The aFe differential cover is designed to fit the factory axle supplied as original equipment. For some applications or due to the use of certain factory options and/or aftermarket products, there may be clearance issues with the aFe differential cover and other vehicle systems.

It is the responsibility of the installer/vehicle owner to ensure that no other vehicle component come in contact with the aFe differential cover. Contact with any other vehicle component, or any modifications made to the aFe differential cover will automatically void the warranty. aFe assumes no liability, express or implied, for damage or injury to persons or property.

A1



K

E

F

I

H

A2



J



Refer to Figure A for steps 1-3

Step 1: Park your truck on level ground and apply the parking brake.

Step 2: Position a drain pan under the differential cover.

Step 3: Using a 10mm socket with 3/8" drive ratchet, remove the bolt securing the brake line bracket to the top of the differential housing.

REMOVAL

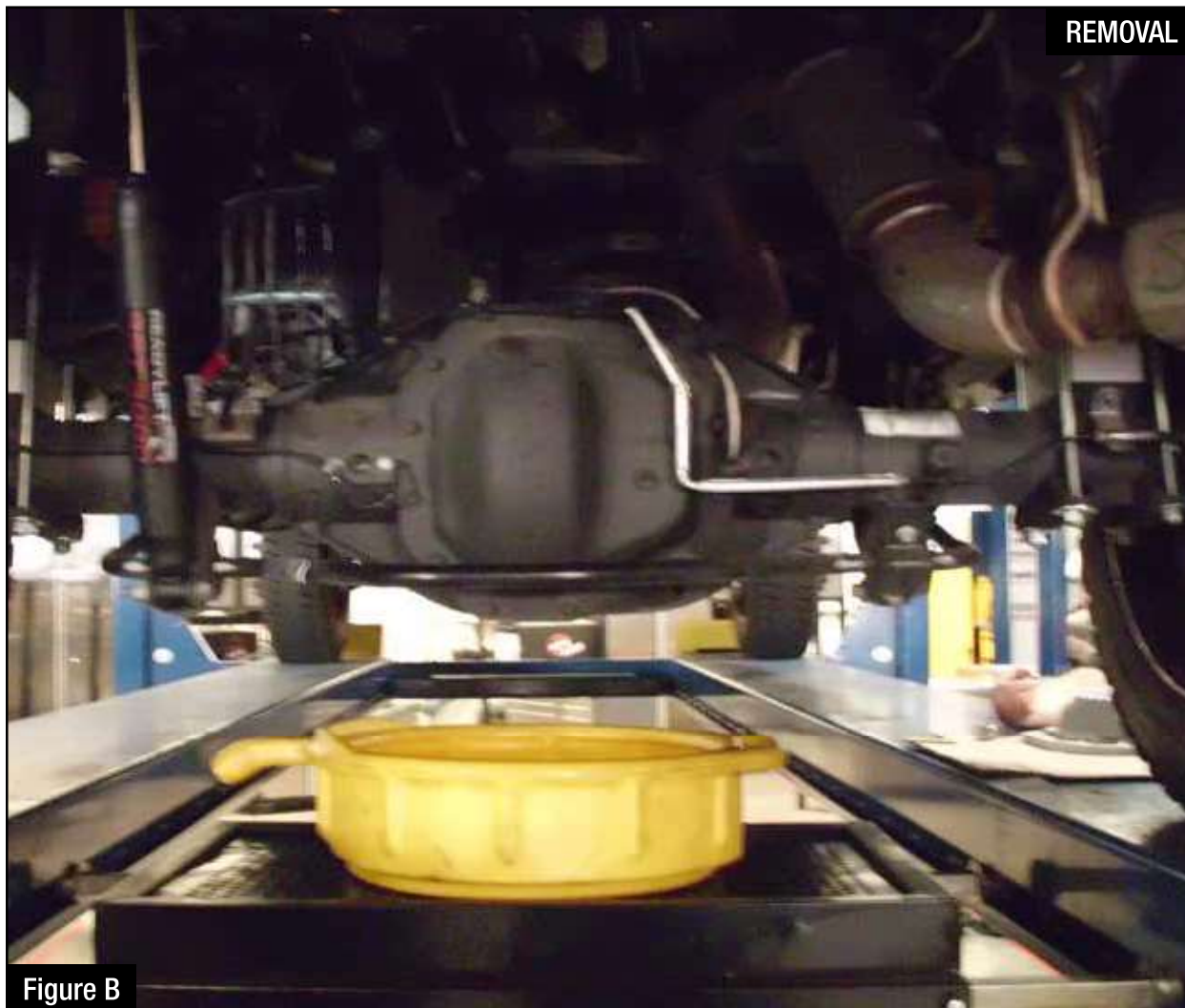


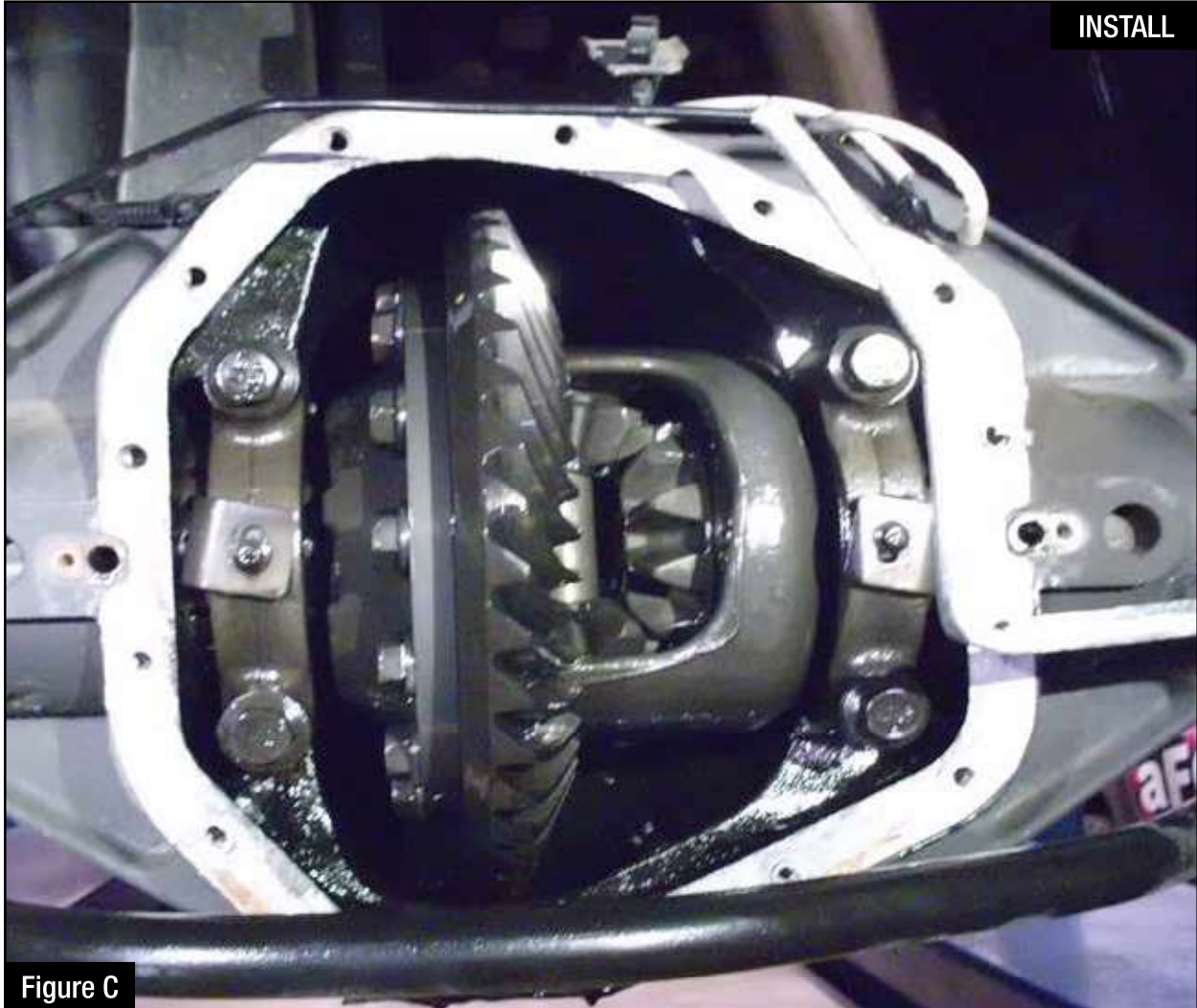
Figure B

Refer to Figure B for steps 4-6

Step 4: Using a 12-point 13mm socket with 3/8" drive ratchet, remove the lower 13 bolts on the differential cover. Oil will drain from the lowest bolt hole. Retain the Axle ID tag.

Step 5: Loosen but do not remove the upper most cover bolt.

Step 6: Use a gasket scraper to loosen the cover from the axle housing.



Refer to Figure C for steps 7-9

Step 7: Remove the upper bolt and cover. Allow the last of the old gear oil to drain.

Step 8: Using a clean, lint free rag, wipe down the remaining oil from the housing. Scrape off old sealant from the sealing surface. This surface must be clean for the new cover to seal.

Step 9: Before installing the aFe differential cover, check the surface of the differential housing for any irregularities. Should there be any, carefully remove any high spots using a smooth flat file.

DO NOT "ROUND OFF" THE SEALING SURFACE!



Figure D

Refer to Figure D for steps 10-12

Step 10: Apply Teflon tape on the threads of all the plug components before installing.

Step 11: Install the M12 magnetic drain plug and washer into the bottom of the aFe differential cover and tighten.

When installing kit number 46-70380 only:

Step 12: Install the large 1" NPT plug into the large hole on the side of the differential cover (not shown).

NOTE: Do not overtighten NPT plugs.



INSTALL



Figure E

Refer to Figure E for step 13

Step 13: Using the silicone provided, lay a continuous bead around the cover.



Figure F

Refer to Figure F for step 14

Step 14: Install the aFe rear differential cover by aligning the bolt holes and start one of the new 30mm socket head cap screws and washers in the top bolt hole. Continue counterclockwise around the bolt pattern until 12 screws and washers are installed and finger tight. Install the M10 aluminum washer under the bolt to the right of the drain plug. (Circled in Figure F)



INSTALL



Figure G

Refer to Figure G for steps 15-17

Step 15: Use the last two socket head cap screws to secure the axle tag at the top of the cover.

Step 16: Using a 8mm hex bit and a 3/8 drive torque wrench, torque the socket head cap screws to 20 - 22 ft.-lbs. in a cross tight pattern.

Step 17: Using the bolt removed in step 3 attach the brake line bracket to the top of the axle housing



Refer to Figure H for step 18

Step 18: Fill the aFe differential cover using new oil. Fill until the oil runs out of the 1/8" NPT plug of the side of the differential cover.



Figure I

Refer to Figure I for steps 19-20

Step 19: Install the 1/8" NPT plug in the side of the aFe differential cover and wipe off excess oil.

NOTE: If your vehicle has been modified or lifted and your axle is rotated, you will need to check if you have the correct level of oil in the differential for your vehicle.

Step 20: Install the 3/4" NPT 6" deep reach magnet into the top of the aFe differential cover and tighten.

INSTALL



Figure J

Refer to Figure J for step 21

Step 21: Your installation is now complete.

NOTE: Retighten all connections after approximately 100-200 miles.



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