

***advanced FLOW engineering***  
**Instruction Manual** P/N: 46-71100A / 46-71100B

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Dana 60 – 10 Bolt Front Differential Cover

Make: **Ford** Model: **F250/F350** Year: **17-20** Engine: **V8 – 6.2L/6.7L/7.3L (td)**

- 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 (46-71100A)	05-60975A
A2	1	Differential Cover – Black, Machined Fins (46-71100B)	05-60976B
B	1	RTV Silicone	05-60096
C	10	Screw, Socket Head 3/8"-16x1"	03-50229
D	10	Washer, Flat	03-50230
E	1	Washer, Crush M12	03-50384
F	2	Plug, 1/8" NPT	03-50029
G	1	Plug, 3/4" NPT (Included in 46-71100A)	03-50391
H	1	Plug, Magnetic 3/4" NPT, 6" Deep Reach (Included in 46-71100B)	03-50223
I	1	Plug, 1" NPT Sight Glass (Included in 46-71100B)	03-50224
J	1	Plug, Magnetic M12x1.25	03-50385

1



A1



A2



B



C



D



E



F



G



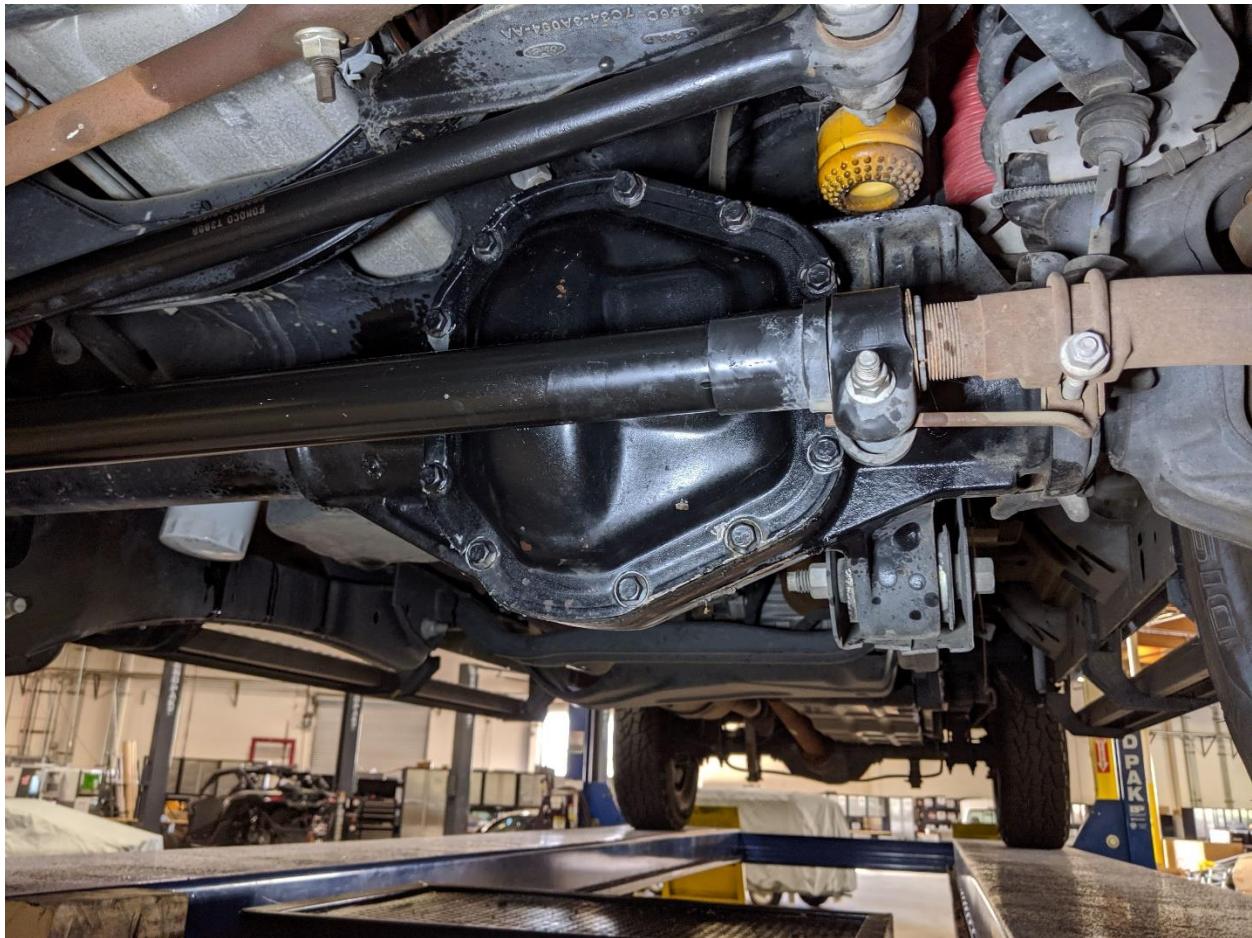
H



I



J



1. Park your vehicle on a flat, dry surface. You will need to block the tires to prevent the vehicle from rolling.
2. Place a drain pan under the differential cover.
3. Remove the bottom nine (9) bolts from the differential cover, leaving only the top bolt.
4. Loosen, but do not remove, the top bolt. Break the seal on the cover and the gear oil will begin to drain.



5. Allow all of the gear oil to drain from the differential.
6. If your vehicle has a breather port attached directly to the differential cover, remove it now.
7. Remove the one (1) remaining bolt from the top of the differential cover.
8. Carefully insert a gasket scraper between the differential cover and the housing. Pry the differential cover off. **Do not gouge the sealing surface.**
9. Remove the OEM cover from the housing.



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

***Note: Do not “Round Off” the flat gasket surface.***

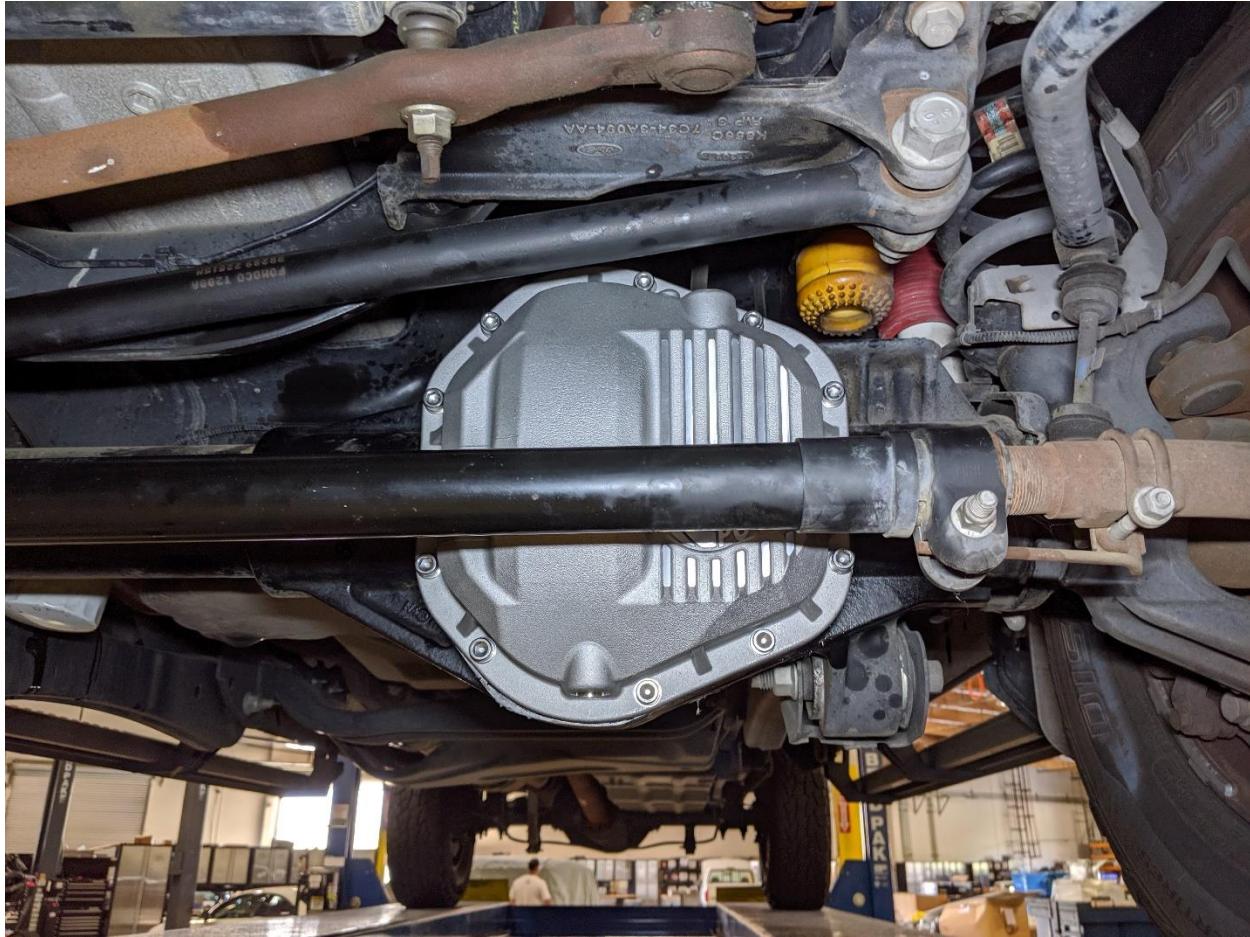


13. Hold the supplied aFe differential cover up to the gasket surface to make sure you will be able to maneuver it into place easily.

**Note: If applicable, you can re-use the OEM gasket in place of silicone.**

14. Spread the supplied RTV silicone across the gasket surface. Be generous when spreading the silicone across the surface, ensuring to follow along the inside of all the bolt holes.

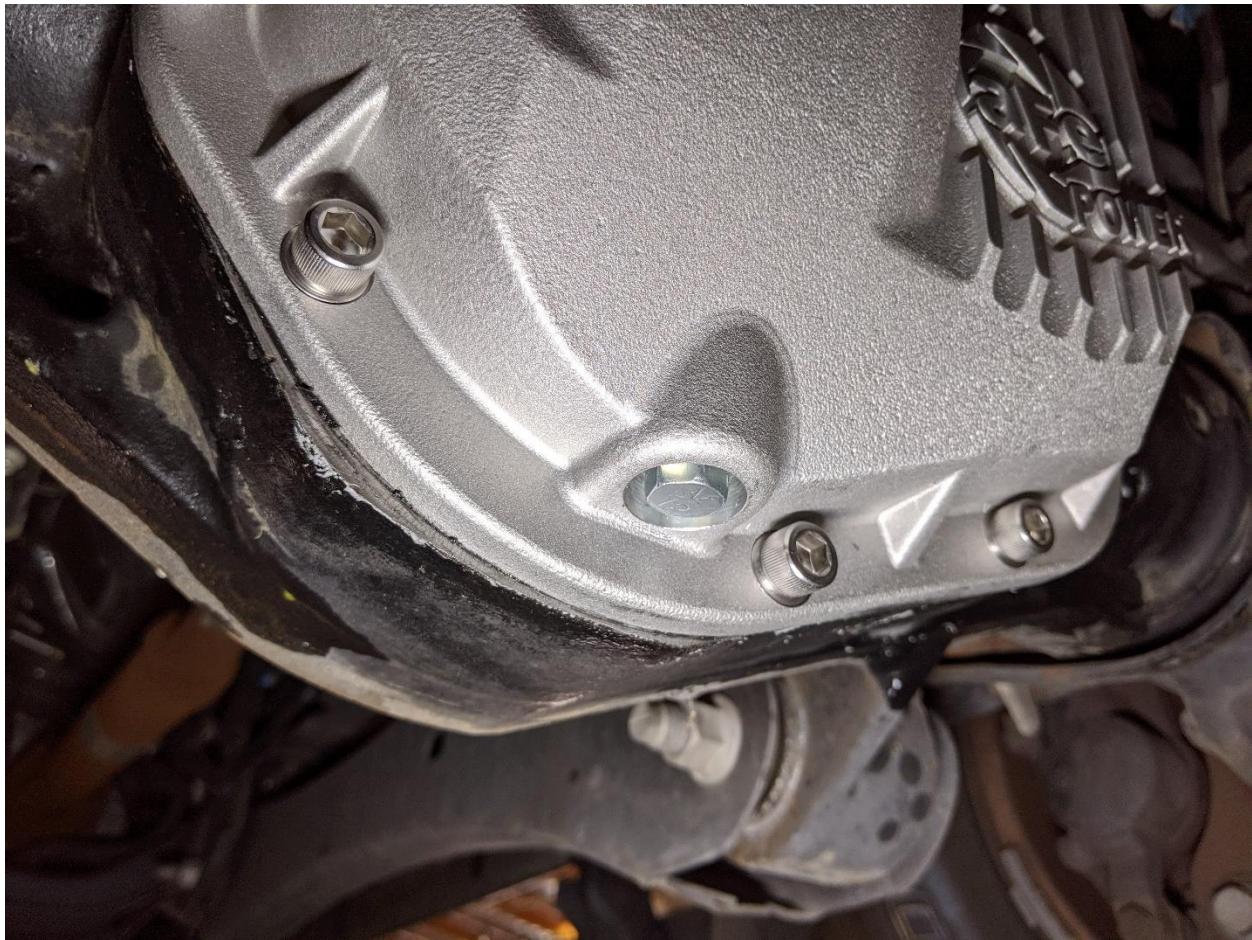
**Note: Before moving on, make sure that the silicone will completely seal with the gasket surface.**



15. Hold the aFe differential cover into position, aligning the screw holes. Install four (4) of the supplied 3/8"-16x1" socket head screws and flat washers into separate sides of the cover to hold it in place.

**Note: Be careful not to move the cover around once it touches the gasket surface.**

16. Continue installing the remaining 3/8"-16x1" socket head screws and flat washers finger tight.
17. Torque the mounting screws to 12-16 ft. -lbs. in a crisscross pattern.



18. Install the supplied M12x1.25 drain plug and crush washer into the bottom of the cover.

**When installing kit number 46-71100B only:**

19. Apply Teflon pipe sealant to the threads and install the supplied 1" NPT Sight Glass plug into the side of the cover.



20. Using the top fill port, fill the aFe differential cover using new gear oil. Fill until gear oil runs out of the 1/8" NPT port on the side of the cover (about 4 quarts).

**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.**



21. Apply Teflon pipe sealant to the threads of the two (2) supplied 1/8" NPT plugs.

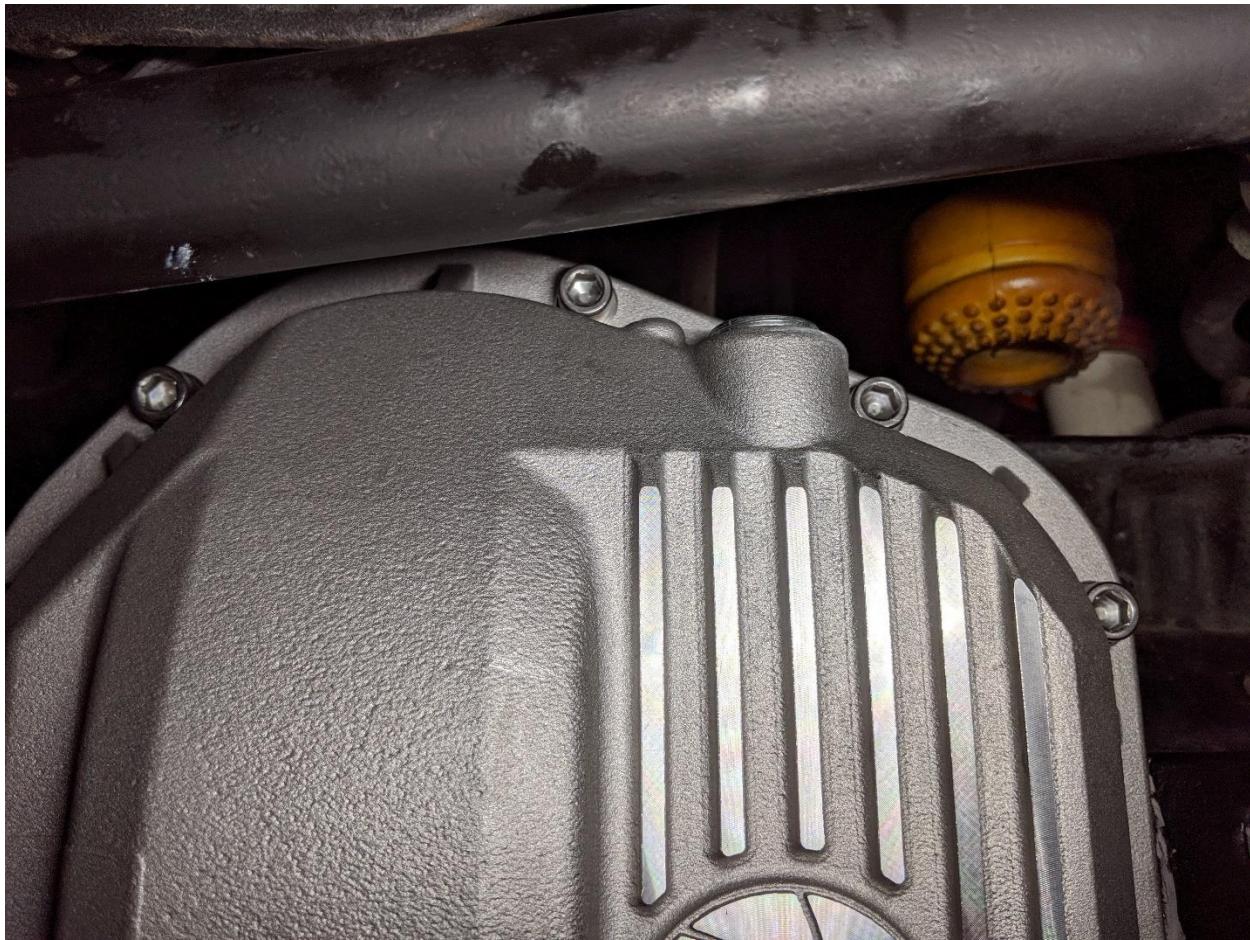


22. Install one (1) 1/8" NPT plug into the side of the cover.



**When installing kit number 46-71100B only:**

23. Apply Teflon pipe sealant to the threads of the supplied 3/4" NPT magnetic 6" deep reach plug.



**Note: If your vehicle had a breather port attached directly to the differential cover, reinstall it now in place of the 1/8" NPT plug.**

24. Install the remaining 1/8" NPT plug into the top of the cover.

**If installing kit number 46-71100A:**

25a. Install the supplied 3/4" NPT plug into the top of the cover.

**If installing kit number 46-71100B:**

25b. Install the 3/4" NPT magnetic 6" deep reach plug into the top of the cover.



26. Your Installation is complete.

# 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-transferable.
- 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.

<b><u>Product Category</u></b>	<b><u>P/N Prefix</u></b>	<b><u>Warranty duration</u></b>
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	46-7	Life of the vehicle
Transmission Pans / Oil Pans	46-7	Life of the vehicle
Turbochargers	46-6	2 years
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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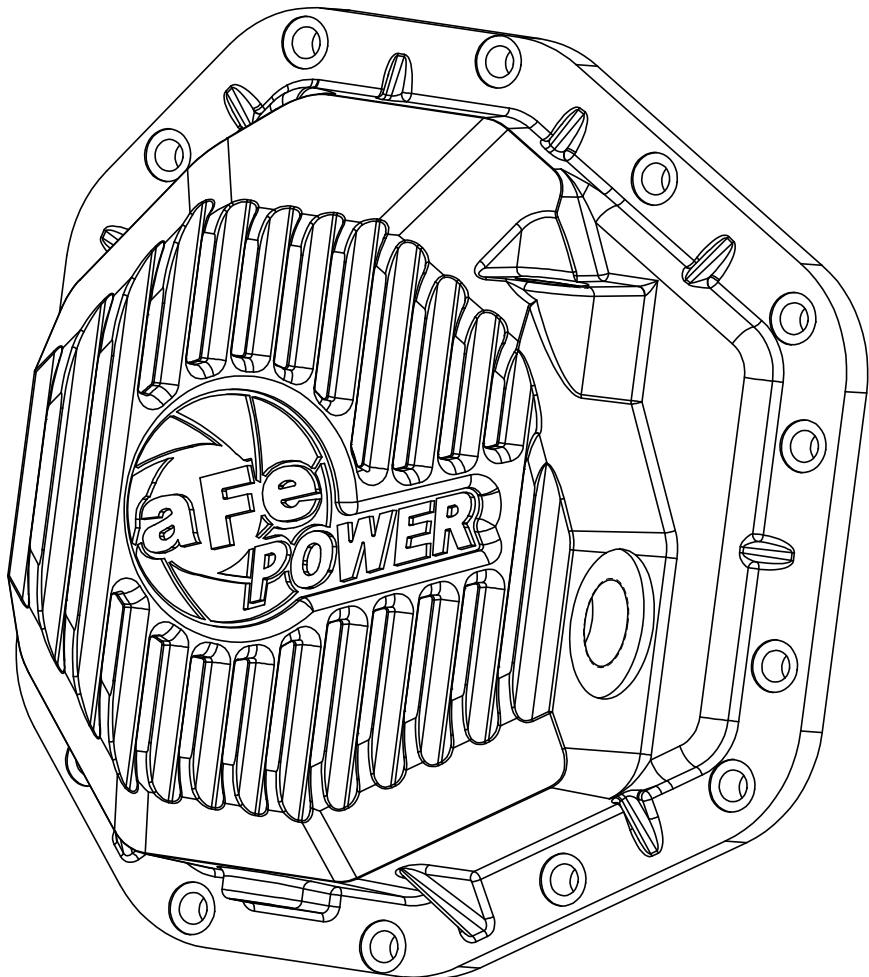
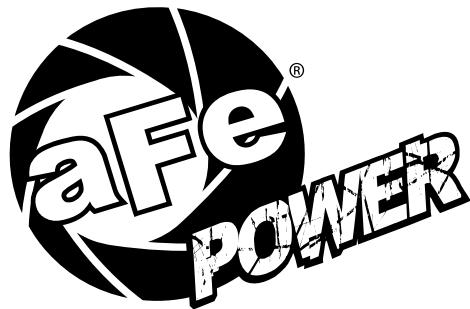


***advanced FLOW engineering, inc.***

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***advanced FLOW engineering***  
**Instruction Manual** P/N: 46-70350 / 46-70352

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Make: Ford Model: Super Duty F-250/F-350 Year: 17-21 Engine: V8-6.7L Power Stroke  
Fits: DANA M275 (14 Bolt) Single 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 (46-70352)	05-60744B
A2	1	Diff. Cover - Raw, Machined Fins (46-70350)	05-60744A
B	1	Porthole View Gauge (Included in 46-70352)	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 46-70370)	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.

#### 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.



REMOVAL



Figure A

**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.

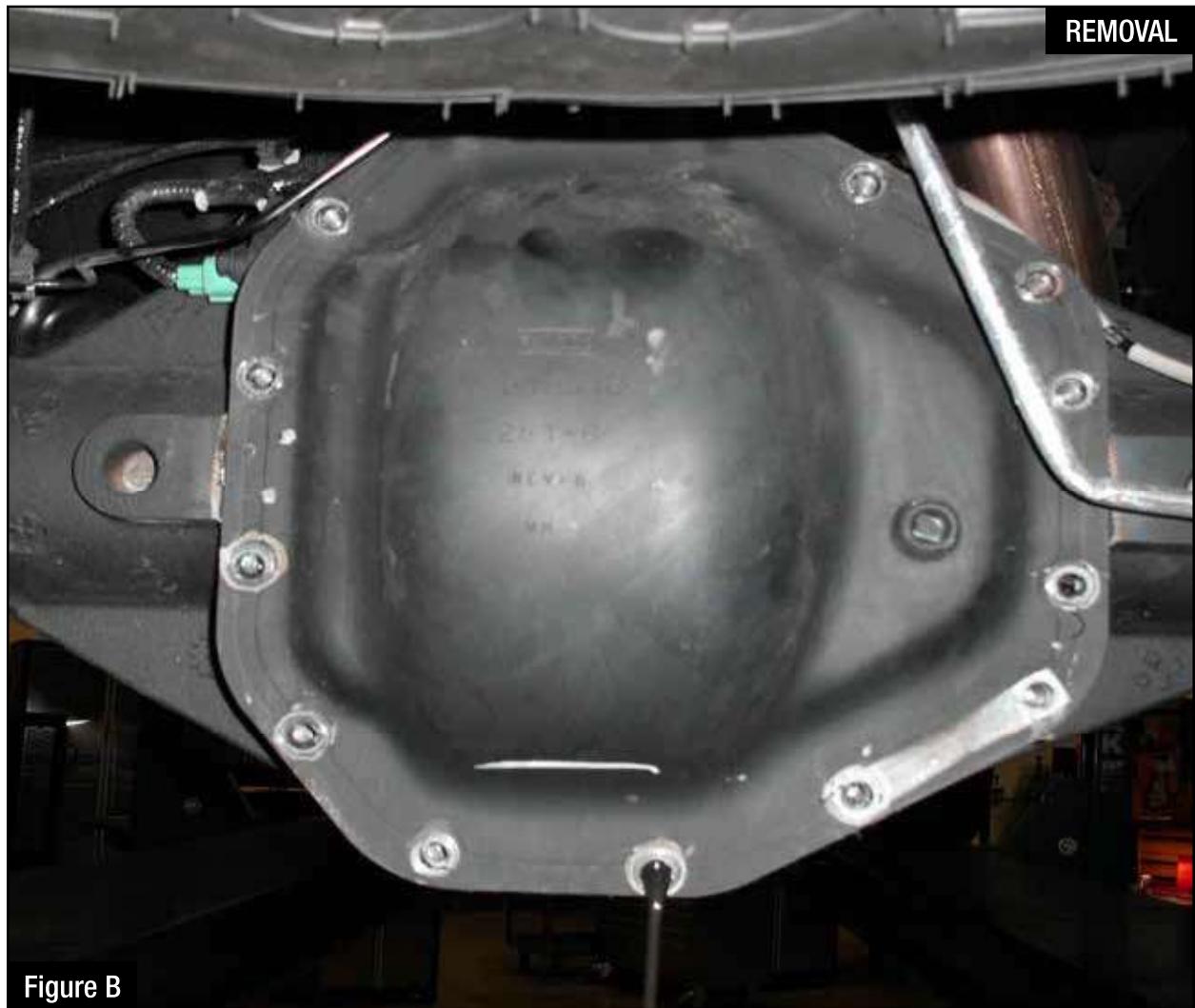


Figure B

**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.

INSTALL



Figure C

### **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 46-70350 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.

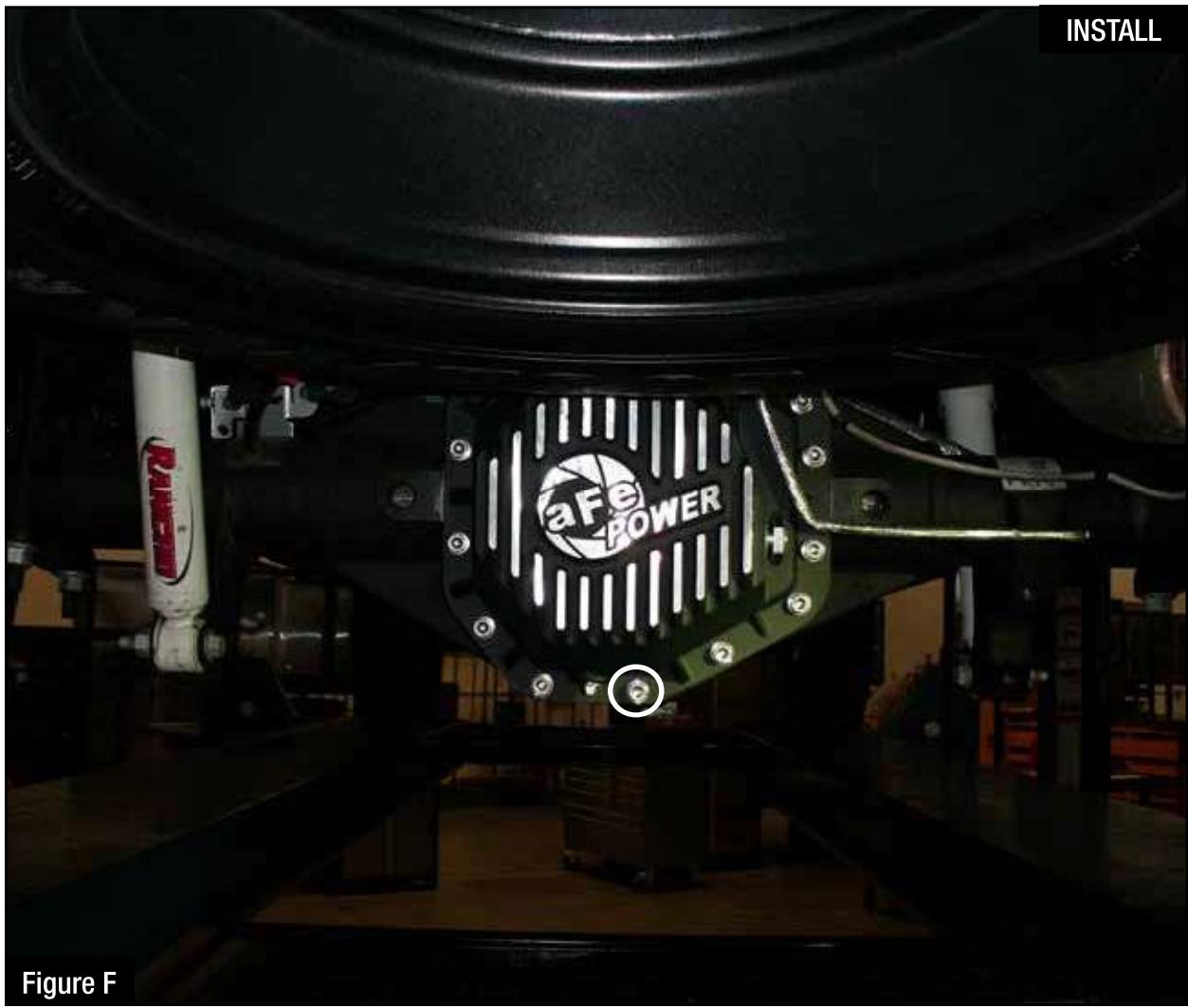


Figure F

**Refer to Figure F for step 14**

Step 14: Install the aFe front 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



INSTALL

Figure H

**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 H

### **Refer to Figure H 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 H

**Refer to Figure H for step 21**

Step 21: Your installation is now complete.

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



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