

**advanced FLOW engineering**

**Instruction Manual** P/N: 46-70090 / 46-70092

Make: **Dodge** Model: **RAM 2500/3500** Year: **2003-2005** Engine: **L6-5.9L (td)**

Also Fits:

**RAM 2500**

**2003-2011**

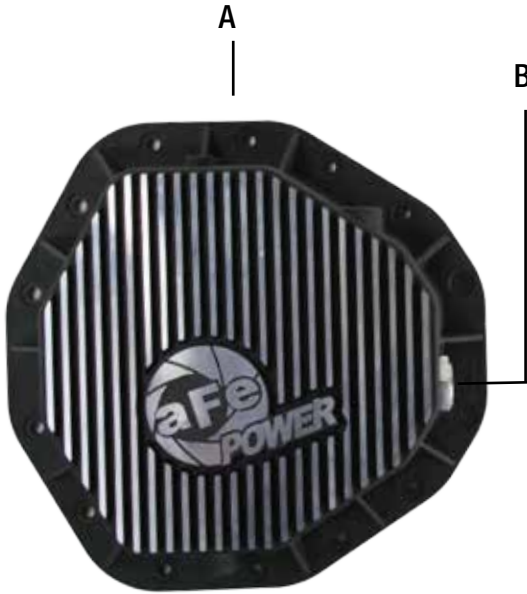
**Automatic Gas Trucks**



- Please read the entire instruction manual before proceeding.
- Ensure all components listed are present.
- 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
A	1	<a href="#">Diff. Cover Rear</a> - Machined Fins AA-14-10.5	05-60073
B	1	Porthole View Gauge	03-50224
C	1	Plug, 3/4" -14 NPTF	03-50222
D	2	Plug, Hex Hd Socket 1/8 NPT	03-50029
E	1	Plug, 3/4"-14 NPTF, 6" Extended Reach	03-50223
F	14	Washer, Flat 5/16 AN	03-50228
G	14	Screws, Hex Socket, M8x1.25x30	03-50225
H	1	O-Ring 12.475" ID x .139"W	05-60168
I	1	Strap, Ratchet w/ S-Hook 1"x 10"	05-60085

Installation will require the following tools:  
 13mm socket, 6mm Allen bit w/ 3/8" ratchet drive, ratchet, 3/8" drive torque wrench, 1/2" drive torque wrench, 3/16 Allen key & oil drain pan, gasket scraper, a clean lint free rag & teflon pipe sealant tape



A

B

D

H

E

G

F



C

I



Figure A

**Refer to Figure A**

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

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



### **Refer to Figure B**

Step 3: Begin by loosening the 7 screws on the bottom of the differential cover using a 13mm socket.

Step 4: Now loosen the 7 screws on the top of the differential cover to start draining the old gear oil.

DO NOT remove screws.

Note: You may need to use a gasket scraper to crack the seal to start draining the gear oil. If so, start at the bottom of the cover and carefully insert and pry off the old cover (Do not scratch surface).



Figure C

### **Refer to Figure C**

Step 5: Remove all the screws holding the cover on and allow the last of the gear oil to drain.

Step 6: 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.

Step 7: Before installing the aFe differential cover check the surface of the differential housing for any irregularities. Should there be any, carefully remove the high spots using a smooth flat file.

**DO NOT "ROUND OFF" THE FLAT GASKET SURFACE!**

INSTALL



Figure D

**Refer to Figure D**

Step 8: Apply teflon pipe sealant tape on the threads of all the plug components before installing.



Figure E

**Refer to Figure E**

Step 9: Using a 3/16" allen wrench, install 1/8" NPT plug into the aFe differential cover oil level port (Torque to 30 in-lbs). Install 1/8" NPT plug or temperature sensor into the sensor port at the top.  
Note: If installing a temperature sensor be sure to use anti-seize on sensor threads.

INSTALL



Figure F

**Refer to Figure F**

Step 10: Using a 1/2" Ratchet, install the drain plug onto the bottom of the aFe differential cover (Torque to 50 ft.-lbs.).



Figure G

**Refer to Figure G**

Step 11: Install your new o-ring onto the aFe differential cover.

INSTALL



Figure H

**Refer to Figure H**

Step 14: Install the aFe differential cover by aligning the bolt holes and start one of the new allen cap screws and washers in the top bolt hole.

Step 15: Continue around the bolt pattern until all 14 screws and washers are installed finger tight.

Step 16: Using a 6mm hex bit, torque the allen cap screws to 16 ft-lbs. in a criss cross pattern.



INSTALL



Figure 1

**Refer to Figure 1**

Step 17: Refill the aFe differential cover with new gear oil. (Your new aFe differential cover takes about 4.5 quarts to fill)



Figure J

### **Refer to Figure J**

Step 18: Use the aFe sight glass to check the oil level.

Note: If your vehicle has been modified or “lifted” and the axle has been rotated, you will have to establish the correct oil level for your vehicle. If the fluid is overfilled, it can be drained to the proper level through the side oil level port.



Figure K

**Refer to Figure K**

Step 19: Once the oil level is correct, using a 1/2" ratchet, install the deep reach magnetic plug (torque to 50 ft.-lbs.) DO NOT OVERTIGHTEN.

INSTALL



Figure L

**Refer to Figure L**

Step 20: If needed, use the strap provided to secure the spare tire towards rear of the truck to make clearance space between the spare tire and the aFe differential cover.



INSTALL



Figure M

**Refer to Figure M**

Step 21: Your installation is now complete. Verify all connections are secure before driving. Drive at least 25 miles and check the oil level using the aFe sight glass and fill if necessary.

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