

# Crankcase Ventilation Modification for Under \$40

## for 1997 7.3L Powerstroke

### Materials List

Qty	Description	Price	Supplier	Part No
5	3/4" heater hose	\$1.59/ft	O'Reilly's	28418
3	3/4" hose clamps	\$1.19/ea	O'Reilly's	MP5012
1	3.35 oz. form a gasket	\$6.99/pkg	O'Reilly's	81724
1	3/4" hose coupling	\$4.49/ea	O'Reilly's	84741
2	viton seals for doghouse	\$1.63/ea	Ford Dealership	F4TZ-6769-C
2	viton seals for doghouse bolts	\$3.75/ea	Ford Dealership	F4TZ-6769-A
1	1/4" x 1" SAE bolt	\$0.08/ea	Home Depot	
1	1/4" lock washer	\$0.03/ea	Home Depot	
1	1/4" fender washer	\$0.03/ea	Home Depot	
1	1/4" SAE nut	\$0.05/ea	Home Depot	
1	1" electric conduit clamp	\$1.99/pkg	Home Depot	

### Additional Parts I Did Not Purchase

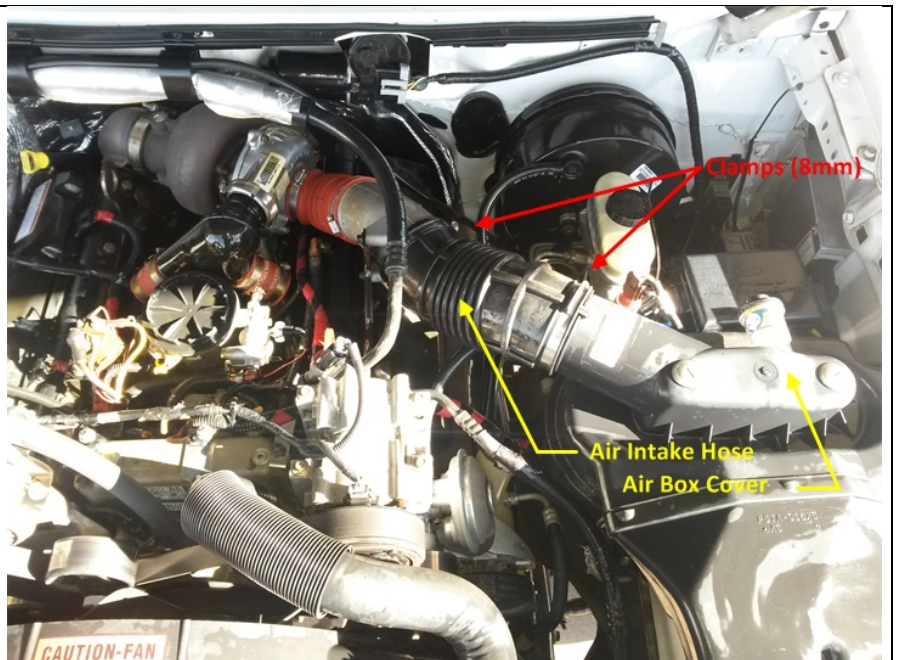
- \* 1 – 2" x 1-1/2" x 1/8" smooth aluminum plate metal
- \*\* 1 – 2" x 1-1/2" x 3/64" gasket material
- \*\*\* 1 – 4mm x 14mm bolt

### Length of Time to Complete Modifications

- \* 1.5 hours (remove and re-install doghouse and new ventilation hose)
- \*\* 1.0 hours (make and install aluminum cover plate on metal intake tube)

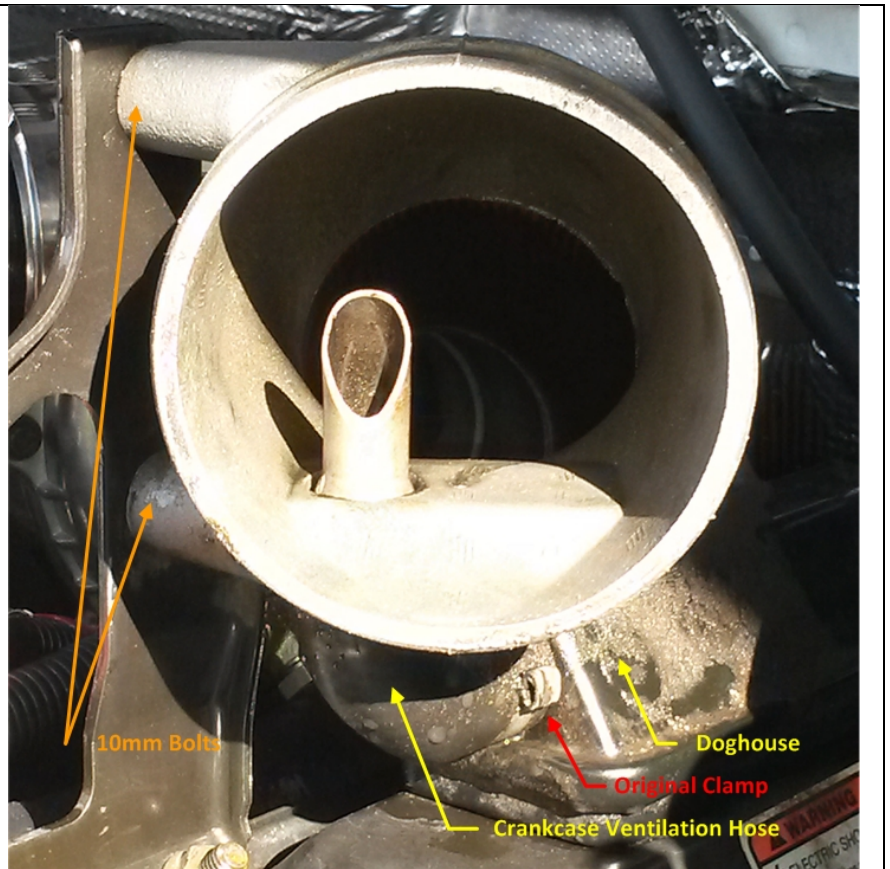
### Instructions

1. Remove the air intake hose and air box lid (it is easier to leave the air intake hose attached to air box lid if possible). If you no longer use the stock air box, you may need to also remove the filter element or cold air intake box.

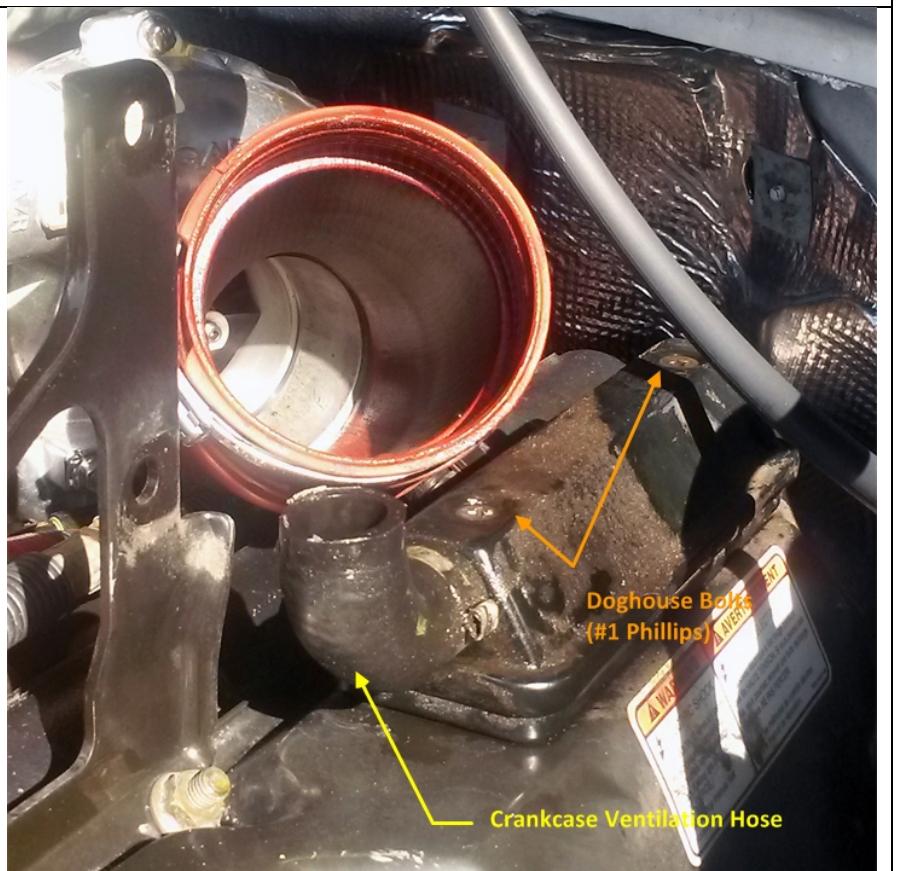


2. The yellow arrow indicates where to locate the crankcase ventilation hose under the aluminum intake tube. The red arrow points to one of the original clamps on the crankcase ventilation hose. There is another clamp underneath the aluminum intake tube. Remove the two (2) 10mm bolts holding the aluminum intake tube to the support bracket. Make sure to loosen the clamp (8mm) at the back of the aluminum intake tube. Rotate the aluminum intake tube and disconnect the crankcase ventilation hose from the bottom of aluminum intake tube.

**Note:** Do not discard the crankcase ventilation hose, you will re-use the hose.



3. Remove the two Phillips head bolts holding the doghouse in place on the driver side valve cover. Lift the doghouse off the valve cover.





4. Replace the old seals on the doghouse and on the doghouse bolts.



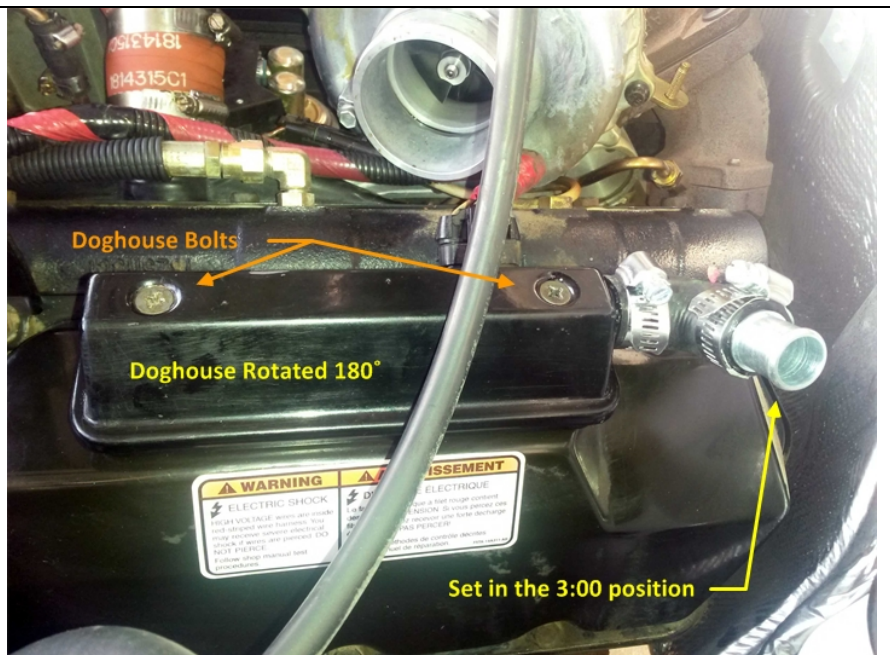
5. Replace the factory hose clamp on the crankcase ventilation hose with a 3/4" hose clamp. Insert the 3/4" hose coupling and install a 3/4" hose clamp. Do not completely tighten the hose clamps at this time.



6. Rotate the doghouse 180° from the original position and re-install on the valve cover.

**CAUTION – do not over tighten the doghouse bolts or you will deform or crush the doghouse.**

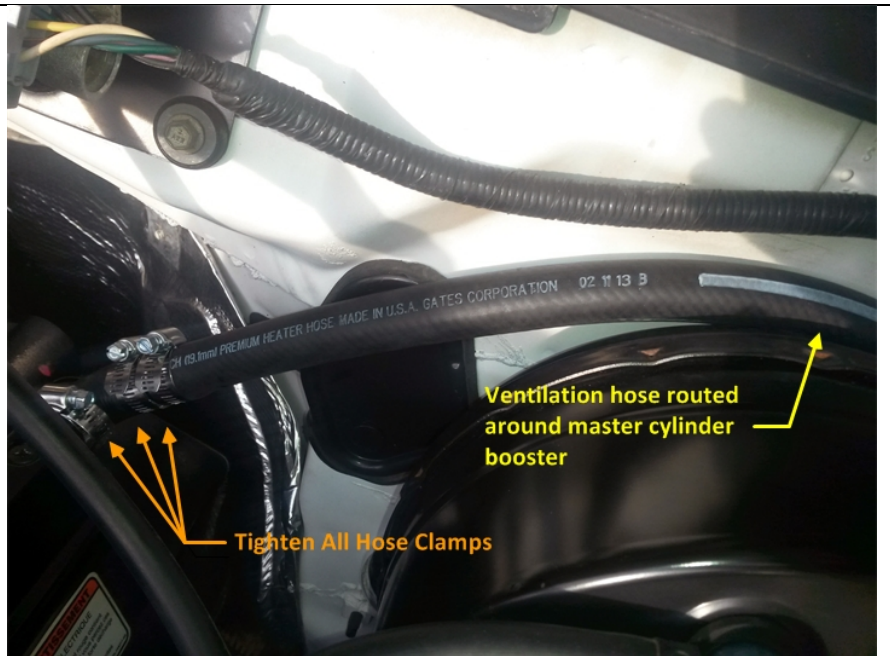
Rotate the crankcase ventilation hose from the 12:00 position (vertically straight up) to the 3:00 position. Make sure the hose has a slight upward tilt.





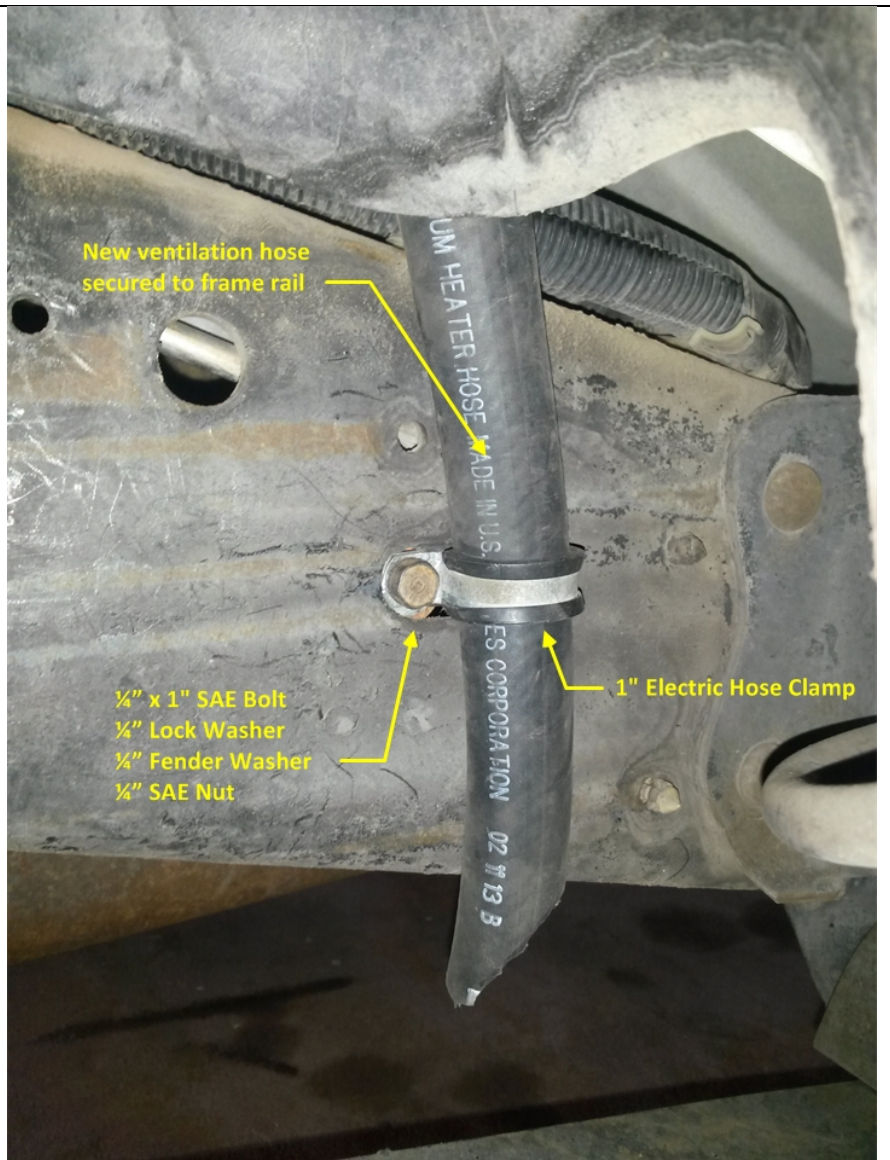
7. Route the new ventilation hose around the master cylinder booster and down between the inner fender and the firewall to the frame rail. Slide a hose clamp onto the new ventilation hose. Slide the new ventilation hose onto the  $\frac{3}{4}$ " hose coupling. Tighten all the hose clamps securely.

**IMPORTANT:** Make sure the new ventilation hose does not have any low points (sags or dips) where condensation or oily residue will collect and prevent free ventilation flow. This condition could cause the crankcase to become over-pressurized and result in oil leaks around your engine.



8. Secure the new ventilation hose to the frame rail. Trim off the excess length of the ventilation hose.

**CAUTION:** Avoid allowing the new ventilation hose to rub against any wiring or to touch any exhaust components.





9. Remove the old ventilation tube from the aluminum intake tube. Clean (simple green) the opening of the aluminum intake tube. Make sure the oil residue and old silicone gasket sealer is removed completely.

**Note:** Thoroughly clean (simple green) and remove any oil residue from the remaining air intake hoses.

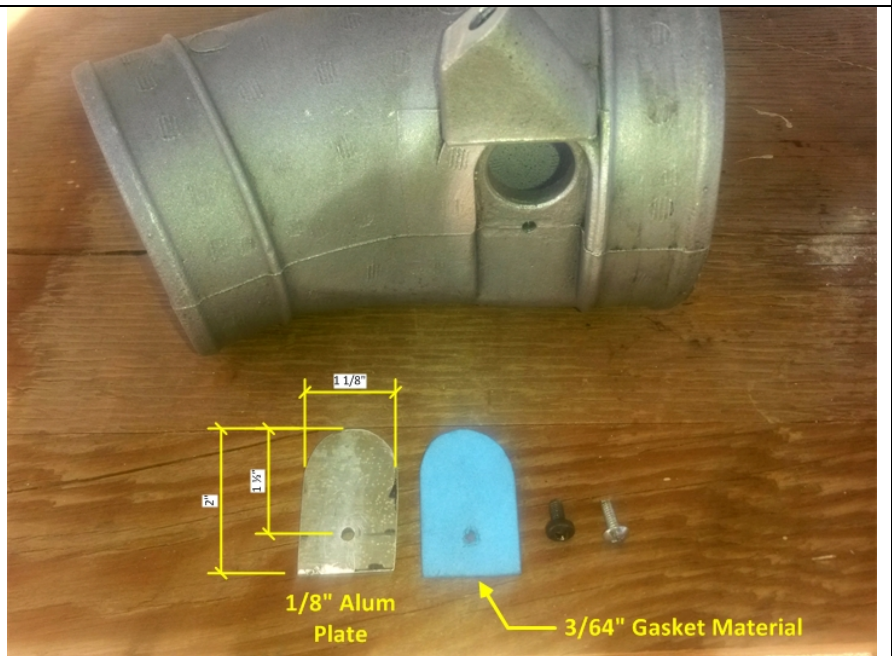


10. Measure the recessed opening in the aluminum intake tube. Cut the aluminum plate to cover the opening in the aluminum intake tube. Let the plate extend approximately  $\frac{1}{2}$ " past the threaded bolt hole.

**HINT:** Use a socket that seats snugly into the recessed opening as a pattern to mark and cut the aluminum plate.

Use the aluminum plate as a pattern to cut the gasket material.

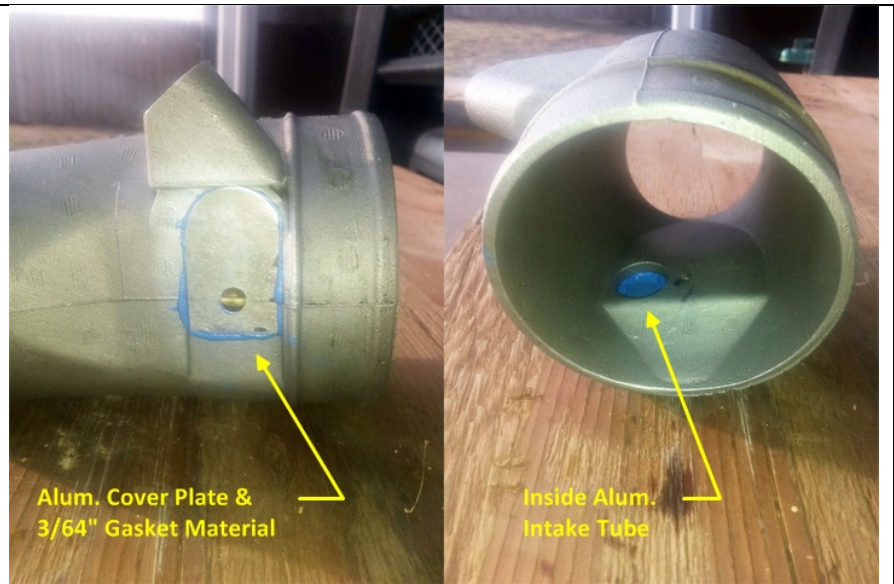
**Note:** Replace the original bolt with a 4mm x 14mm bolt (approx.  $\frac{1}{8}$ " longer).



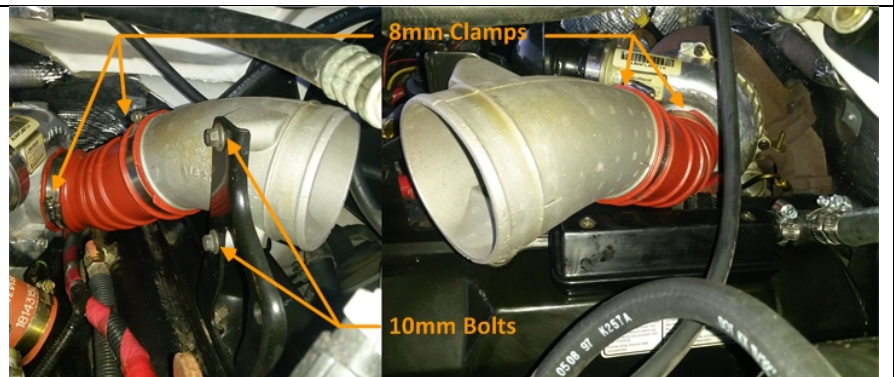


11. Make sure the gasket sealer is rated for at least 500°. Apply a small bead of gasket sealer on the aluminum intake tube, both sides of the 3/64" gasket material and the underneath side of the aluminum cover plate.

**Note:** Read directions on the gasket sealer. Allow the gasket sealer to set before using according to the instructions (approximately 1 hour set time and 24 hours cure time).



12. Slide the metal intake tube into the silicone intake tube on the intake side of the turbo. Re-install the 10mm bolts through the support bracket and into the metal intake tube. Tighten the 8mm clamps on the turbo intake and the back end of the metal intake tube.



13. Re-install the air intake hose and air box lid to complete the installation. Make sure to tighten the 8mm clamps on the air intake hose.

