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FORD 4.6L DOHC REFILL/BURP PROCEDURE

This procedure is based on a collaboration of information from the forums, the Ford TSB and personal experience. I've only included what I feel is relevant in order to refill the system properly as quickly as possible. The general concept here is that air will accumulate at the highest point in the system which is the crossover tube.



1) Car must be parked level or on a slight incline with the front higher is even better.

2) Remove the radiator reservoir cap and crossover plug.



(The crossover plug is normally removed with a 1/4" socket drive but is frequently found to be seized. You can damage your ratchet if you apply too much force to remove it. It may be necessary to use a pair of vice grips around the edge of the plug and, in extreme cases, heat it with a torch. I recommend the use of anti-seize or grease on the crossover plug threads upon reinstallation. It is never necessary to tighten the crossover plug much, just snug it, there is an O-ring to seal the system.)

3) Fill the reservoir just past the full line. It is best to add antifreeze (3/4 gal is about 20% concentration) or any additives at this time. Cap the reservoir and you should not need to open the reservoir again. In fact **ALWAYS CHECK AND FILL THE SYSTEM AT THE CROSSOVER PLUG** after verifying the reservoir is full. (*Warning:* Do not rely on the reservoir bottle to degas the system or indicate coolant level. The reservoir may show normal level even when there is a large amount of air in the system. There have been those who have lost engines due to not adding coolant at the crossover plug.)

4) Get a funnel and wrap some tape around the tip in order to make a seal with the crossover tube opening. Screw the funnel down into the crossover threads until the funnel seats in firmly.

5) With the reservoir capped, continue adding coolant at the funnel until the funnel fills up an inch or two. Squeeze the upper radiator hose a few times to force air pockets out of the piping.



6) Turn the heater temp control to hot. Start the engine and let it idle but occasionally rev the engine a bit to dislodge any trapped air. Add coolant to keep the funnel full if necessary. You will notice many large air pockets escaping at first but eventually the level will rise in the funnel as temperature goes up expanding the coolant. Keep the engine running just until the thermostat starts to open a bit. (About 170-172° with our thermostat) When this happens the upper radiator inlet will be warm to the touch. (It is normal for tiny air bubbles to still be escaping out of the funnel- this happens because the system is open and unpressurized.)

7) Shut off the engine but be ready to add coolant because the level in the funnel may drop as soon as you do so. Quickly unscrew and remove the funnel, top off the coolant and reinstall the crossover plug only snug. (This is done to keep coolant from being expelled because stagnant coolant in the engine becomes heated and starts expanding again) A common mistake is to run the engine too long which creates excessive heat and, instead of dropping, the coolant level rises in the funnel when the engine is shut off. If this happens just reinstall the plug quickly to minimize coolant loss.

8) After 40 min to an hour the engine will still be warm. Slowly remove the crossover plug but use caution because there may still be a little pressure in the system. Top off the coolant again but this time do not reinstall the plug.

9) After 3 to 5 more hours the engine will be completely cooled down and you will need to top off the crossover once more. Reinstall the crossover plug then verify that the reservoir is full. **DO NOT OPEN THE RESERVOIR CAP WITH THE CROSSOVER PLUG REMOVED.**

10) You may drive the vehicle normally. Make sure the engine reaches full operating temperature. Best to do some highway cruising and/or the engine should see some mid-rpm speeds at minimum.

11) Later or the next day when the vehicle is completely cold again: Do not start the car and do not open the reservoir. Just top off the coolant at the crossover again. If you have to add more than an ounce or two of coolant then repeat this step again after another heat cycle. (For those who want to get every bit of air out you can repeat this step a few times until you can add only a capful of coolant.)

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