Technical Guide

Bleeding the Cooling System on a Nissan Navara D23 YS23 Engine

Bleeding the cooling system on the YS23DDT or YS23DDTT engine requires a specific procedure to ensure all trapped air is removed from the system, particularly around the electric water pumps. Follow these steps carefully to ensure your Navara runs at the perfect temperature.

Important Preparation and Precautions

- **Coolant Type:** When refilling, use Genuine NISSAN Long Life Antifreeze/Coolant (blue) or an equivalent quality coolant mixed with distilled or demineralized water.
- **No Additives:** Do not put additives, such as water leak preventatives, into the system, as they may cause clogging in the engine's coolant pathways.

Step 1: The Initial Fill

- Start by opening the heater air bleed plug (1).

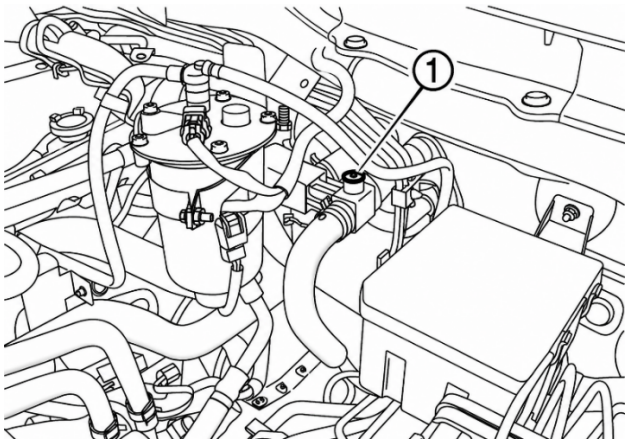

Fig 1.

- Open the system's air plug (2).

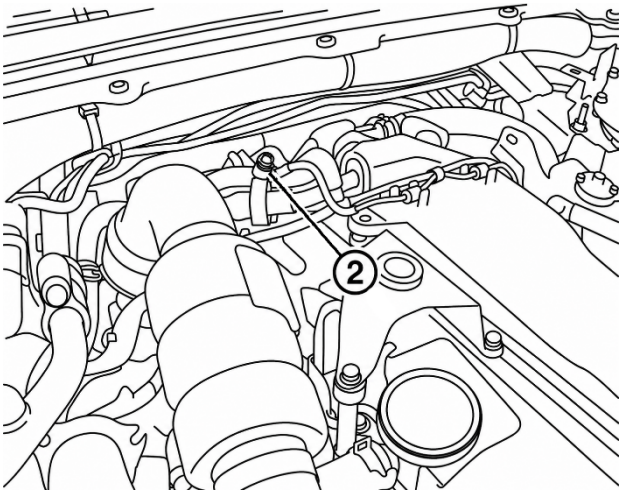

Fig 2.

- Remove the radiator cap.

- Begin pouring engine coolant through the engine coolant filler neck. It is critical to pour slowly at a rate of less than 3 litres per minute to allow trapped air to escape.
- Watch for coolant flowing over from the heater air bleed plug. Once it overflows, push the radiator hose to help force out air, and check the coolant level at the radiator. Repeat pouring and pushing the hose until the coolant level remains unchanged.
- Install the radiator cap.
    - **Warning: Do not open the radiator cap after this step. If you open the cap again, you must restart the entire process from the beginning.**
- Refill the reservoir tank to the "Max" level line with engine coolant.

Step 2: Bleeding the Electric Water Pumps

- Disconnect the water hose A from electric water pump 1.

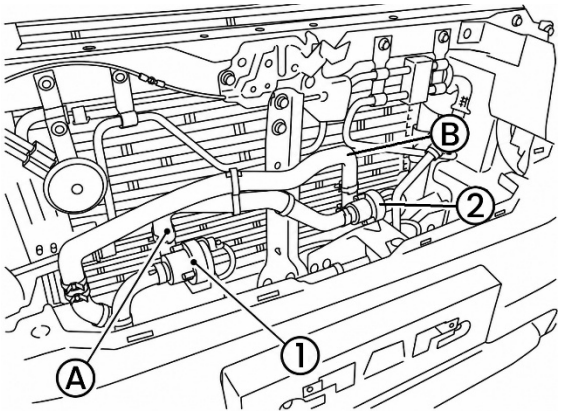

Fig 3.

- Turn the vehicle's ignition switch to the "ON" position to start the electric water pumps.
    - **Caution: Do not start the engine.**
- Watch for engine coolant to overflow from electric water pump 1. Once it does, reinstall the water hose to electric water pump 1.
- Next, disconnect the water hose B from electric water pump 2.
- Wait for the engine coolant to overflow from electric water pump 2, then reinstall its water hose.

- Check that engine coolant flows over from the air plug 2 Fig 2. After the overflow occurs, close the air plug.
- Install the reservoir tank cap.

Step 3: Engine Cycling and System Circulation

- Start the engine, then immediately turn it off once.
- Leave the engine off for approximately 10 seconds, then check the engine coolant level.
- Repeat the process from checking the air plug overflow to briefly running the engine until the reservoir remains consistently filled to the "MAX" level.
- Reinstall the reservoir tank cap.
- Warm up the engine, ensuring you keep it under 3000 rpm. While the engine is warming up, push the radiator hose to circulate air locks.
- Stop the engine and allow it to cool down to less than approximately 50°C.
- Open the reservoir tank cap and check the engine coolant level. If the level is below the "MAX" line, refill the engine coolant again.
- Warm the engine up again until the thermostat opens. Remember to push the radiator hose while the engine warms up.
- If the engine coolant level does not drop further, ensure the reservoir tank is at the "MAX" level.

Step 4: Final Air Bubble Test

- Stop the engine and allow it to cool down to less than approximately 50°C.
- Close the windows, doors, and hood of the Navara, and turn off the audio system to ensure a quiet environment.
- Start the engine and keep it running at 1000 rpm for 30 seconds.
- Slowly accelerate the engine from 1000 rpm to 3000 rpm this counts as one cycle. Repeat this acceleration for 3 complete cycles.
- Listen carefully for any "bubble" noises coming from the heater core.
- If you hear bubble noises, repeat the bleeding process from the initial coolant level checks through the engine cycling.