

How to Change Coolant on a 4 cylinder Hino Diesel

Changing the coolant is an easy task that should take no longer than 60 minutes per engine. The Coolant for your Hino 4 cylinder diesel should be changed at minimum every season. The Hino engine manual recommends every 6 months. Use a low silicate ethylene glycol type coolant. If you never change your coolant it can actually take on an acidic quality causing rust and damage to the engine and cooling system. Follow the steps below to change your coolant:

1. You will need the following items to change the coolant:
 - a. 14mm Socket and Ratchet
 - b. 3 feet of 5/8 in. clear poly hose
 - c. One 5 gallon bucket to hold old coolant. You do NOT want to drain this stuff to the bilge, it will make a huge mess and is environmentally unsound.
 - d. 6-8 Gallons of 50/50 mixture Anti-Freeze. 3-4 Gallons per side.
2. Step one is to empty the coolant from the 1st engine
 - a. Make sure engine is cool and has not been run for an hour or so.
 - b. Remove the Mani-Cooler Radiator Cap – The Port (left side) is located under the access port which is located in the storage compartment right below the ladder. The Starboard (right side) is accessible under the access port in front of the salon entry way.
 - c. Port side:
 - i. You will need to crawl down in the engine room between both engines. Take the Bucket, hose and 14mm socket and ratchet with you.
 - ii. The coolant drain is located on the side of the Alternator bracket at the front of the engine. The coolant plug is a 14mm brass plug. When the plug is turned counter clockwise 5-6 full revolutions the coolant will start to flow out the drain pipe just under the bracket
 - iii. First connect the 5/8 in clear hose to the drain pipe. The other end goes in the 5 Gallon Bucket
 - iv. Once the bucket and hose are positioned, you can start extracting the brass plug. You will not remove the plug, just back out until coolant begins to flow through the clear hose. Be careful not to strip the plug. The plug is brass and will strip if care is not taken. If the plug is frozen and will not move try spaying liquid wrench or equivalent on the plug. If the plug is painted take a wire brush to the area to remove the paint so that the liquid wrench can penetrate the area. As a last resort to a stubborn plug use heat. Carefully apply heat to the plug using a butane torch. This will expand the plug with heat helping to free the seized area.

- v. Approximately 3 to 3 ½ gallons will come out and this will take about 5-10 minutes. If the coolant looks clean your good. If it is rusty, you will need to thoroughly flush the system with radiator flush. To flush, purchase radiator flush from an automotive store and follow the directions. This usually entails filling and draining the heat exchanger until clear water comes out. Then fill with water and flush, run for 15-20, then drain. Dispose the old coolant according to local regulations. Most auto parts store will take and some marinas will as well.
 - vi. Once totally drained re-tighten the brass drain plug
- d. Starboard Side:
- i. The starboard side coolant drain is on the outside, fuel tank side of the engine. In order to drain the coolant into a bucket requires access to the front of the engine.
 - ii. Remove the Starboard side front engine access port located inside the aft cabin.
 - iii. Place the 5/8 in clear hose to the coolant drain. You have to reach behind and below the alternator to do this.
 - iv. Now position the 5 gallon bucket so that the hose end reaches to the bottom of the bucket
 - v. The next step is to back out the drain plug. This can be done from the back of the engine while stranding in the engine room.
 - vi. Follow steps above to back out a stubborn plug and how to deal with old rusty colored ant-freeze coolant.
 - vii. Once totally drained re-tighten the brass drain plug
3. Each Mani-cooler also has a "Pet-Cock" valve that can be used to drain additional coolant sitting in the area. Place a small bucket under the valve, then open on each engine to drain additional coolant out. You may need to unplug the drain by placing a wire or equivalent up through the pet-cock. Close the valve when done.
 4. Now that you have removed all of the ant-freeze coolant, you can simple re-fill both engines. They take anywhere from 3.4 to 4 gallons.
 5. Once the engines are full of coolant, replace the cap.
 6. Now start each engine and look for leaks. Only do this for 2-3 minutes.
 7. Carefully remove the radiator cap and check the level of the coolant add more if needed.
 8. Take the boat out and run up to at least 2400 for a few minutes to make sure the system does not leak or overheat. On rare occasions air can become trapped in the system causing the system to not cool properly. If this happens you will start to see the engine get hot quickly and you will need to shut down and bleed the air out of the system. To bleed the air, there is an Air Vent plug located just after the mani-cooler right before the turbo if one is installed. Let the engine idle, and then slowly open the Air Vent to let all air out.