



2010 43QGP Allegro Bus

1/30/2016

ONE-HUNDRED-TWENTY-FIRST - coach modification –
GENERATOR COOLANT DRAINING. Our coach was manufactured during January 2010 that makes the generators coolant six years old at this time. Decided it was time to drain, flush and pour in new coolant. In an effort to keep as many liquids the same between the coach's engines (coach and generator) I decided to use Cat ELC, this coolant is comparable with the Shell Rotella ELC coolant Tiffin used in our Cummins ISL9 engine and the Cat ELC coolant is easy to find. Our coach has a 10KW Onan generator many Tiffin owners have the same generator. First order of business, locate the generators coolant drain plug.



I found the drain plug however the drain plug is inaccessible until modifications are made for access. Tiffin mounted a pair of angle rails under the sides of the generator the angle rails are used to support the generator, and also enable the generator to be extended out of and retracted into the front cap. As stated I found the drain, however at least on our unit the drain is not accessible without making a modification to gain access to the plug. As seen in the photo the angled metal leaves only 1 3/4" access to the drain plug.

The angled metal prevents access to the ¼” hex brass drain plug, actually with the angle metal in place, not only could I not see the drain plug I would not have been able to remove the plug because the access hole cut into the angle metal was not centered under the plug. I could not see that problem before cutting and removing a 2” x 3” piece of the angle from the support. The 2 inch and 3 inch cuts can be seen in the below photo.



Tiffin installed rubber foam between the generator and the two angle metal pieces this acts as a vibration cushion, a small razor knife was used to cut away excess rubber that was blocking access to the plug. At this point I found the drain plug was offset from the hole in the angled metal making plug removal impossible without first enlarging or elongating the original hole, elected rather than drilling a larger hole to just elongate the original.



Decided the easy method would be to use a 1/8" dermal with a rotary rasp, the original hole was elongated which allowed access for removal of the drain plug.



After removing the plug the generators radiator cap was pulled out of its mount, the cap was removed along with removing the drain plug. The long hose between the radiator cap and the radiator has to be pulled up and kept STRAIGHT otherwise there will be a kink in the hose, coolant will not be able to drain nor will the coolant be able to get past the kink in the hose to fill the radiator. After draining the original green coolant, the plug was reinserted enough to contain about 6 quarts of tap water. The generator was started and allowed to run long enough to slightly warm circulating the water which was used to flush the cooling jacket of the generators engine. After warming the engine the flushing water was drained. I ran three flushing cycles using tap water before using DISTILLED water as a final flush of the coolant system. The generators coolant reservoir was filled and flushed at the same time as the radiator. After the distilled water had drained from the generator's radiator the drain plug was installed and tightened. As previously stated when pouring in new coolant the hose needs to be pulled up and out to prevent a kink in the hose, a kink will prevent the

complete refilling of the radiator. There are two small hoses connected to the radiator fill fitting, one hose is connected to the top of the engine's coolant jacket this hose allows air to be purged from the engine when pouring in new coolant. The second hose is connected to the coolant reservoir depending on the temperature of the engine, coolant will be pulled into the engine for cooling or purged back into the coolant reservoir as the coolant expands while the engine is running.



After six years and 704 hours the original coolant does not look bad, the coolant has a nice clear green color.

FWIW, if your generator has the same or similar drain plug access problem as found on our generator. I doubt the OEM coolant has been drained, generator radiator flushed and refilled with new coolant.

If you paid to have this service performed I would check to make sure the drain, flush and refill had actually been performed. While in our case, the drain plug was not aligned with the hole in the steel support, IMO it would be nearly impossible to drain, flush and refill the coolant in our generator because the 1/4" drain plug could not be removed without modification of the drain hole in the support. Inserting a 1/4" hex Allen wrench into the drain plug would most likely not have been possible without first cutting and removing the 2" x 3" piece of support metal. 🤖