

# Diesel Vanagon Coolant Filler— Adapting the “Libby Bong” to the Diesel Setup

Jim Felder—New Year’s Eve 2009

Andrew Libby of Flagstaff AZ invented a clever way to fill a Vanagon’s convoluted cooling system and purge air bubbles throughout. It works by using PVC pipe to raise the fill opening to the highest part of the system. Without it, water pump pressure at a high idle is used to force the coolant up through the system, over the top of the heater system just under the dash, down below the radiator and then up again over the top of the radiator.

Those attempting to use this device should first familiarize themselves with the standard means of filling the system.

The device is simplest in the form it was originally designed for, the filling of the later-model filler tanks with the screw-on caps. Diesel Vanagons do not have a feature that allows the rubber adapter to be mated to the fill tank with only a hose clamp; the locking old-style radiator cap used with the diesels would never hold coolant enough to work satisfactorily. The solution described here shows how to mate a discarded diesel coolant tank cap to a PVC tube to allow the simplified filling of the diesel setup. The system’s ten-dollar or so cost will be recovered in the savings in lost coolant over several fills, to say nothing of the environmental and time saving advantages.

The project begins by clamping an old coolant cap in a vise and drilling out the center apparatus—rivet, spring, etc.. This is more difficult than it sounds as all this wants to spin as soon as the drill catches it. It may be easier for some to grind or cut it away until all that is left is just the metal flanged cap. Throw everything else away except the rubber gasket found directly under the metal cap.

You will need 24 inches of 1 1/2 inch PVC, an iron 3/4 (I guess, look around and fit things together in the store) coupler, an adapter to go from the outside of the PVC to the coupler, a 90 degree nylon thread-to-barb elbow and two feet of clear flexible tubing to fit the elbow’s barb. You will also need a pipe tap for whatever size the nylon elbow threads are—presumably 3/8—and the proper drill.

Begin assembly by scuffing up one end of the coupler and the top of the cap to create a good surface for epoxy. Glue the coupler into the depression in the top of the cap. If the parts are right it will make a nice, self-centering fit. Set this aside to cure.



When all is ready for assembly, use clamps to tighten the small end of the adapter to the iron coupler as shown. Some RTV wouldn't hurt.



Drill and tap the PVC for the elbow 1 1/2" from the end of the pipe. Connect the adapter to the pipe.



Attach the tube, and use a coathanger wire to make a clip for it what will fasten the open end to the open top of the pipe when is use. The plastic tub is important because it allows the coolant remaining in the pipe to be saved for future use instead of on the driveway. The end is simply lowered to empty the pipe's contents, if there any, into a container.

Glue (rubber cement, or similar) the rubber gasket-washer into the inside of the cap.

The finished setup looks like this:



When the glue has cured, it's ready to use. Remove the cap on your reservoir, open heater all the way to Hot, add enough coolant to run engine so that thermostat opens, remove the filler bolt on the radiator. Keep adding until pure coolant comes out the filler hole and put everything back together.