



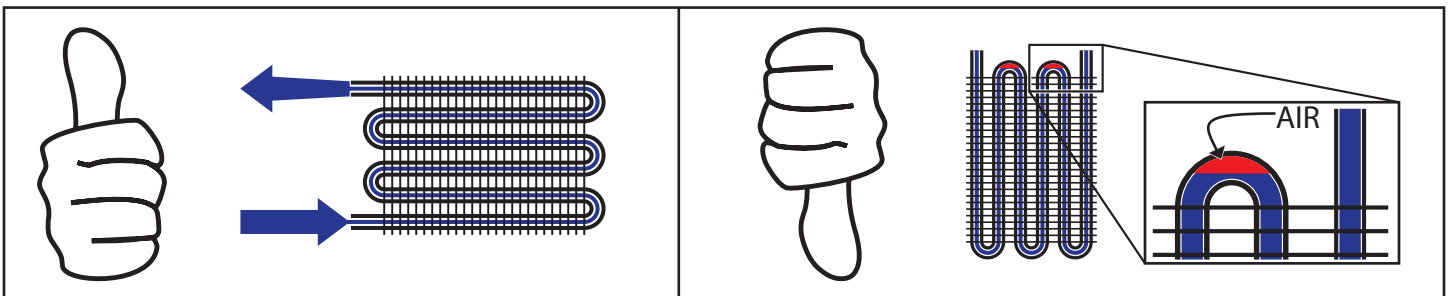
Information: Power Steering Fluid Coolers

Properly setting up a power steering system can pay huge dividends in terms of system performance and longevity. One of the most important things to consider is how to mount the power steering fluid cooler. Steps should be taken to prevent air from entering the system. Further steps should be taken to ensure that any air that gets in will get out. Serious problems can arise when air bubbles are trapped in the system.

A power steering fluid cooler works by exchanging heat from the fluid to the air. This exchange always works in the direction of hot to cold. So, if the air is hotter than the fluid, heat will be transferred from the air to the fluid resulting in a higher fluid temperature. Hence, it is always important to place the cooler in a location where it will have access to the coolest air. The engine compartment is a poor location since under hood temperatures can exceed that of the power steering fluid.

Proper cooler placement also has to do with where and how the cooler is mounted. The cooler should always be in the return line, between the gear box or steering valve and the reservoir. It should always be mounted physically lower than the reservoir. This will prevent fluid "drain back" where fluid can empty from the cooler and lines into the reservoir when the engine isn't running. When drain back occurs, something has to replace the fluid that has left the lines or cooler and that something is air. No cooler should be mounted with the ports pointed down.

The cooler must be properly oriented. For "tube" type coolers, this means that the tubes should run horizontally, and that the fluid should enter at the bottom and exit the top. Mounting a tube type cooler in any other way can lead to air pockets.



"Tank" type coolers (like a radiator) are a little more forgiving and offer one additional mounting option. The first option is the same as is recommended for the "tube" type cooler - the main tubes, or tanks, should run horizontally with the fluid entering the lower tank and exiting the top. The alternative is to mount the cooler so that the ports are pointed up. Since all the cooling rows are tied together at each tank, air should be able to exit the cooler using either mounting method.

