

POWER STEERING – COLD WEATHER HEALTH



Ralph Seekins

We all know that Interior Alaska has more cold weather than just about anywhere else in the USA. As a result, our cars and trucks experience more cold weather stress than do those in the lower 48. One of the systems we see a lot of cold weather concerns with is power steering. So let's talk about some of the common problems our weather systems can cause with power steering and some ways to reduce their frequency.

Power steering is a wonderful system that allows us to effortlessly turn the front wheels of a heavy vehicle back and forth with just one finger. There are a number of different power steering systems. However, they all use hydraulic pressure generated by a pump. The hydraulic fluid is channeled from the pump through hoses, valves, pistons or plungers to either what is called a rack and pinion or a recirculating ball that, in turn, pushes mechanical connections to the wheels forth and back based on your steering wheel input.

When a vehicle is parked outside

in cold weather, the hydraulic fluid gets thicker and is harder to pump through the system. The only way it warms up and thins out is when the pump is working and the fluid warmed up by the movement of the pump pushes the cold, thick fluid out of the lines back to the pump. You may have heard a loud groaning/whining noise coming from the engine compartment of your vehicle when you started up a cold-soaked vehicle and noticed that it goes away as the engine warms up. That is your vehicle's power steering pump starving for hydraulic fluid which lubricates the pump's internal mechanisms. Running the pump with decreased lubrication causes the pump to wear out quicker. There's really nothing you can do to avoid the initial fluid starvation. However, it would be wise to let the vehicle idle until the initial groan/whine is gone before driving off. That keeps the RPMs as low as possible until the pump gets fully lubricated and will avoid earlier repairs.

A small groaning from a power steering pump when turning the wheels all the way to one side or the other is normal and it's normal that it's heard when under heavier load such as turning the wheels while sitting still. Continual growling is not normal. It generally means that something is wrong. You may have a leak that has caused the hydraulic fluid to fall below the required level. Or, you may have a pump

that is close to failure. Have the system checked if you hear that continual groaning. It's also a good idea to have a power steering pump and the hydraulic fluid checked at least once a year – preferably in the fall prior to harsh winter temperatures.

Once the pump is fully lubricated, remember that no fluid moves through the hoses, valves, pistons or plungers until you actually turn the steering wheel. Moving the steering wheel slowly back and forth pushes the thicker fluid out of the lines. But, remember this, do not steer all the way over to the stops on either side. Pushing the wheels up against the stops will cause higher pressure to develop in the lines and this, in turn, is the most common reason that power steering lines or downstream seals start to leak. In fact, in some cases, the pressure gets high enough that it can cause a separation of the lines at the metal to rubber joints or blow seals out of the housings.

A little care can help avoid power steering problems. It's just like some of us – it needs a little warm up before going to work.

Good luck, and safe motoring.

Ralph Seekins has more than 41 years' experience in the automotive industry. He started as a mechanic, worked in sales, and for the past 34 years, has been the owner of Seekins Ford Lincoln, Inc.