

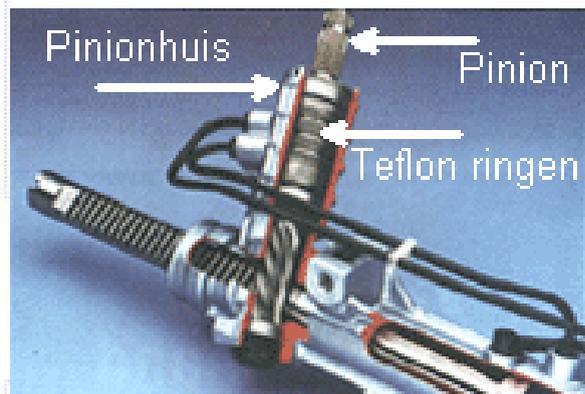
Explanation of “*MORNING SICKNESS*”

“**Morning sickness**” is a condition where the steering feels stiff when the car is first started on a cold morning. Normal power assist doesn't return until the car is driven awhile and warms up.

Within the rack and pinion system's control valve are Teflon ring seals which wear grooves in the pinion housing over the course of driving.

When the seals contract in cold weather and pull away from the grooved housing, a loss of assist in steering can result.

It is only when normal operating temperature is achieved that full power assist is regained. The Teflon rings have expanded and seal off the grooved areas in the pinion housing.



Steering racks affected, usually have an aluminium pinion housing. The hard Teflon makes grooves in the soft aluminium.

Known applications are a.o. BMW 3, Volvo 940/960/850, Saab 900

The pinion housing of a quality remanufactured steering rack is bored and sleeved. A hard metal sleeve prevents the Teflon rings from making grooves.

The problem is not only solved but the sleeve also makes sure “morning sickness” will not occur anymore.