

## ASSEMBLY RECOMENDATIONS OF POWER STEERING

**IT IS VERY IMPORTANT TO IDENTIFY THE ORIGIN OF THE POWER STEERING SYSTEM FAILURE;** which normally can be caused by the following reasons:

- Leakage of hydraulic fluid. Due to faulty seals, damages on o-rings, leaks in tubing connections, or to broken casing among other reasons.
- Hard steering rack. In this case the problem could be both the pump and the power steering. You will find hard the power steering if the pump sends hydraulic liquid without the nominal working pressure or because of the pump is released. The presence of air in the hydraulic circuit, low oil level, dirty hydraulic liquid, narrow tubes, tense rack ends could also cause the sensation of hardness by turning the steering wheel.
- Noise. It is mainly due to the existence of air in the circuit or because of limited flow in any of the oil connection tubes.

**EMPTYING HYDRAULIC LIQUID FROM THE CIRCUIT.** The power steering substitution requires the emptying of the hydraulic liquid. This should be done with the engine stopped and without key contact. It is necessary to open the pump fill plug with hot oil (50 °C approx.) After this you must disconnect the high pressure pipe. Then, move slowly the rack from one extreme to the other, in both directions, with the car lifted. The old fluid should be reviewed looking for metal particles, or other solid particles. If these show up, the proper function of the pump should be checked as it could cause short term problems in the substituted steering rack. Once emptied the circuit, it should be perfectly cleaned, including the pump, this way ensure the absence of any type of contamination.

Note: The circuit must be washed always with hydraulic oil and not with compressed air.

**POWER STEERING SUBSTITUTION.** Both for assembly and dismantling the steering wheel should stay in the central position. Before dismantling the power steering, the return pipe from the rack to the deposit must be disconnected. Please mount the new power steering connecting the high pressure and return tubes.

Note: It is recommended to replace the old sealing rings of the high and low pressure tubes. Extra care must be taken to avoid damaging the bellows assembling the rack. Do not start the vehicle until the circuit has been filled with hydraulic oil. It is recommended to not use any cloth that release small solid particles or hear.

**FILLING OF HYDRAULIC OIL.** The deposit should be filled with the liquid recommended by the manufacturer. With lifted vehicle and switched off engine, move slowly the rack from bump stop to bump stop maintaining 2 or 3 seconds in each extreme. Fill the deposit again.

**BLEEDING OF THE CIRCUIT.** Let the engine idle during 2 or 3 minutes without moving the steering wheel. Fill hydraulic oil until it reaches the level. Manoeuvre the power steering several times in each direction until liquid is coming from the return tube without bubbles. The oil level should be checked when the engine has come to a stand, it is cold and all wheels straight ahead. Fill the system between minimum and maximum fluid level mark of the expansion tank.